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EX PRESIDENT DR. SUN YAT-SEN
Appointed to Reorganize China's Railways

CHINA'S RAILWAY PROBLEMS

AN ANALYSIS OF DR. SUN YAT-SEN'S SCHEME ILLUSTRATING
CHINA'S DIFFICULTIES IN FUTURE RAILWAY EXTENSION
(BY GEO. BRONSON REA)

CLOSING THE DOOR IN YUNNAN; OPERATION OF THE FRENCH YUNNAN RAILWAY
THE RAPE OF MONGOLIA; RUSSIA'S RAILWAY POLICY IN CENTRAL ASIA

THE CANTON-HANKOW RAILWAY, KWANGTUNG SECTION

PHILIPPINE RAILWAYS; KOREAN RAILWAYS

TIENTSIN-PUKOW RAILWAY: THE KALGAN RAILWAY AND EXTENSION

THE LOAN SITUATION

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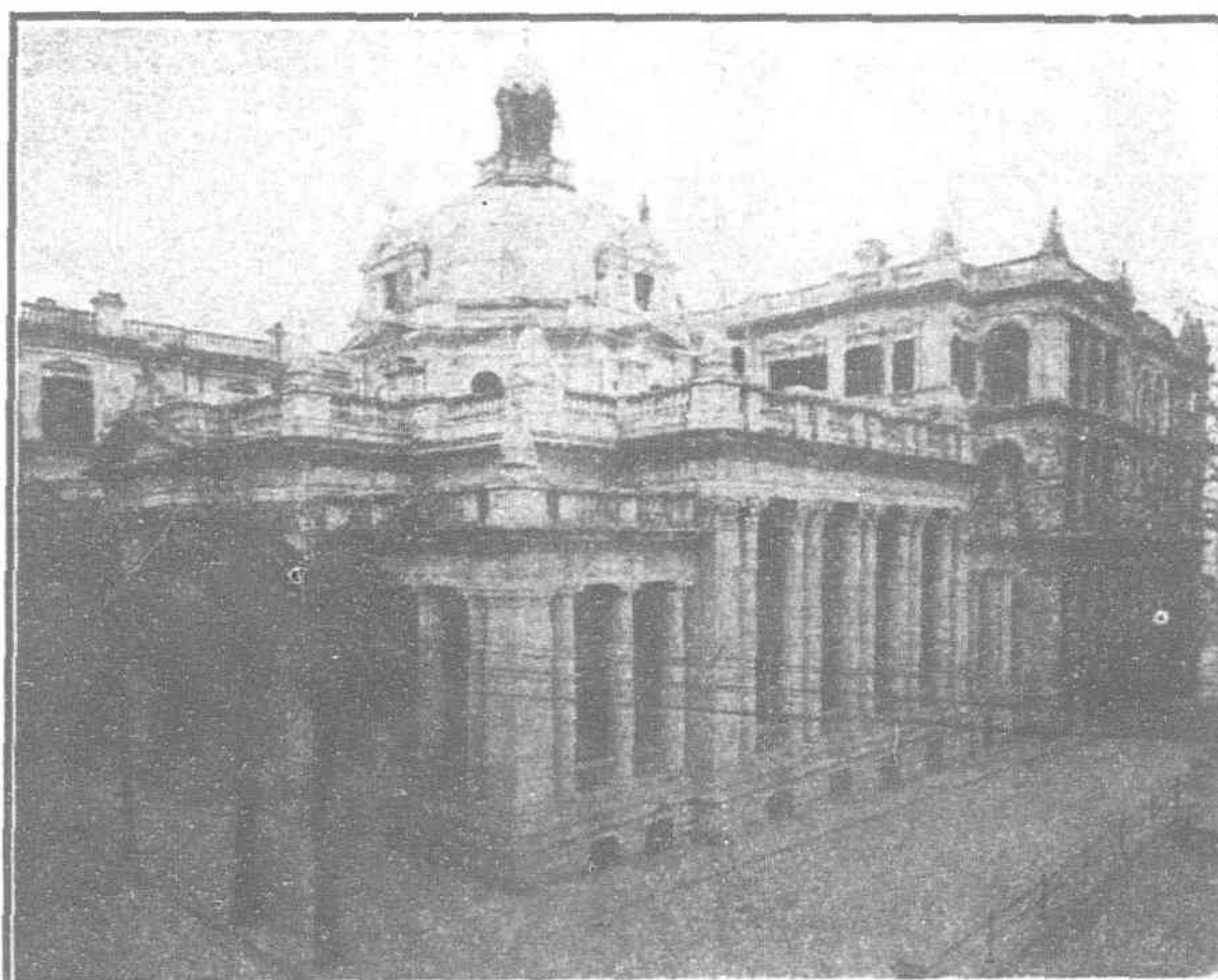
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VOL. IX.

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CHINA'S RAILWAY PROBLEMS

An Analysis of Dr. Sun Yat-sen's Scheme, Illustrating China's Difficulties in Future Railway Extensions

(BY GEO. BRONSON REA)

A Presidential Order of September 10 points out that "inasmuch as the development of the country rests chiefly on the introduction of means of rapid communication the construction and operation of railways are a national necessity, and appoints Dr. Sun Yat-sen "to consider and draft plans for a national system." The Mandate empowers him to submit whatever plans he may make to international financiers in order that the needed capital may be raised, and instructs him to finally tender the results to the Government for approval. Further, the President authorises Dr. Sun "to form and organise a Central Railway Corporation for the purpose of carrying out and effectuating the work hereby charged and entrusted to him."

This is something tangible, and places in the hands of Dr. Sun Yat-sen the most important work in the Republic. It, at the same time, vests him with a wide radius of action in the search for funds to equip China with the lines she needs to bring her even within measurable distance of adequate development. What method of procedure Dr. Sun will ultimately adopt to secure the best financial service has only been suggested, though Dr. Sun has not yet come to a final decision on the point. He is, and has been, however, besieged by all manner of men representing all manner of capital, and of them all he will be well advised to be wary. When he has arrived at the stage when a concrete and practical proposal may be placed before capitalists he will easily be able to find those who know most about the special business he has in hand, and likewise he will discover that they will be ready to listen to him. They will not only be able to tender him valuable advice on the subject now nearest his heart, but they will be able financially and technically to carry out any contract into which they may feel disposed to enter. There are numerous pitfalls on the financial highways and byways that must be guarded against, and Dr. Sun should be wise in time, study well the nature of the ground upon which he might be invited to tread, and keep a sharp and constant vigil for danger signals ahead.

The outline of the scheme which Dr. Sun Yat-sen has in mind was first published in the FAR EASTERN REVIEW last July. Even yet no detailed plans have been devised. A work of such magnitude needs considerable prolonged study, and of late weeks Dr. Sun has had no leisure specially to devote to his hobby. The gastronomical battlefield of Peking has claimed most of his attention, but he has taken occasion by the hand to make post-prandial reference to the need of railways and on other occasions has delivered lengthy speeches on the generalities of his proposals. This is all to prepare the public mind. Even yet in China there is a great superstitious mass to contend against, and what is worse there is the agitating sections who have in the past used the alleged dangers of foreign loans for railways as the shibboleth to gain certain political ends. It is not at all unlikely that the slogan of the anti-everything party will now commence a series of geometric curves suggestive of the disconcerting habit of the far-famed boomerang and make a

landing in an awkward place with an unpleasant thud. But that, of course, has to be considered part of the fortune, or misfortune, of war. To avoid being trapped in such a predicament Dr. Sun is gently breaking the news through the provinces, and it is hoped by him that his arguments of "railways for next to nothing" will entice the potential opponents to pocket their prejudices and permit the plans he has in view to be consummated.

His scheme, as has already been pointed out in this journal, consists of a series of trunk lines and inter-provincial connections. The southern trunk line extends from Shanghai to Canton through Kwangsi, Kweichow and Yunnan to Tibet and beyond to Tianshan. The central trunk likewise commences from Shanghai and traverses the provinces of Kiangsu, Anhui, Honan, Shensi, Kansu, and Hsinchiang, and extends to Ili, whilst the northern trunk starts at Chingwangtao and passes through Manchuria to Outer Mongolia, and on to Kobdo. The National Railway Union of China has a somewhat different idea, though it agrees with Dr. Sun's southern trunk line: It wants to see the shortest connections with Europe, and proposes that the central line should run from Kiangpei, north-westward through Kaifeng, Hsian, Lanchow, the southern slope of Tianshan to Kashgar, with ultimate extension to connect with the Pamirs, Kashmir, Persia, Asia-Minor and Constantinople, whilst the northern trunk should run from Peking through Sui-yuan, Uliasutai, Kobdo connecting with the trans-Siberian line at Tomsk.

During his sojourn in Peking Dr. Sun has certainly preached the gospel of the iron horse with vigorous consistency, and no opportunity has been allowed to slip which could be utilised to drive a wedge calculated to have some effect in splitting up the superstitions and the prejudices of the provincials. To the members of the Peking Press Association, which embraces the editors of all the forty or more papers of the capital, he explained that the Government must have foreign money, and that whilst evil consequences were experienced by the Manchu administration as a result of borrowing foreign money, they were due to wrong and careless negotiation rather than to the foreign loan as such. And he asked what line in China was not built with foreign money—stifling what might have been the jubi'ant retort: The Kalgan line! by adding that the money with which the Peking-Kalgan line was constructed was profit from the Peking-Mukden line. "and hence was still a loan borrowed indirectly, and not purely Chinese money." Then he suggested that he would get over the errors made in the past when security such as likin returns, custom duties, *et hoc*, was given for railway loans, by contracting a foreign loan of \$6,000,000,000 and taking only one-fifth of the sum in hard silver and the balance in railway material, a proposal which, he believed, would commend itself to the bankers.

In ten years he hopes to have 200,000 li of railways built. During the first two years the loan would be negotiated, the

next three would be devoted to the perfection of the survey of the lines, and the end of the following five years would see the completion of the series. Chinese workmen to the number of 2,000,000 could be employed to effect that desideratum. At the meeting of the Railway Union he worked that point out for the benefit of his hearers. "Supposing that ten men can," he said, "in one year, build one li of railway, 200,000 men should be able to build 20,000 li in a year, and 2,000,000 men 200,000 li. Cannot," he asked, "we find among our 400,000,000 people 2,000,000 men to build our railways?" It may not, he added, be easy to organise one company to undertake that tremendous programme, but they could organise several companies. To convince his hearers he described how America prospered in railway enterprises. "The railways in the United States bring in every year," he declared, "a net interest of \$1,500,000,000 (silver) and within ten years repay the invested capital. With a population of 400,000,000, and an area of 2,500,000 square miles awaiting railways for colonization and development, China's future railway returns should be proportionately greater, or four times more than those of America."

But the strongest appeal of the ex-President to the people for co-operation was made on other grounds. He appealed to their patriotism, dilated upon railways as a necessity in self-defence, and enlarged on their influence upon political development and the spread of civilisation. "The aggressive policy of Russia in Northern Manchuria and in Mongolia, the freedom of action of Japan in Southern Manchuria, and the monopoly by Great Britain of influence and authority in Tibet, are all," he said, "a challenge to our military prowess in defending our frontiers." And generally he emphasised his wish for popular confidence in words similar to the following, which are quoted from his speech to the Press Association. "The construction of railways in China to-day is a question of imperative necessity, and one of life and death to the Republic. The chief authority under a popular government rests with the people. It is their approval or non-approval that settles and decides everything of importance. If my scheme be favourably received by the people in general, I shall try to push it to a successful conclusion within ten years. You are representatives of the public opinion, and I hope that you will use every means within your power to enlighten them on the necessity and benefits of railways so that the scheme which I have carefully explained to you will, by their support, become a reality."

The issue of the Presidential Mandate referred to at the outset of this article is the first practical step, and now it is upon the shoulders of the ex-President to evolve a scheme which will be acceptable to foreign financiers, and make arrangements with them which will be acceptable to the members of the National Council at Peking, and the rights-loving people of the various provinces. Dr. Sun has a big task ahead of him; and at least in the suppression of popular distrust of foreign influence through its financial investments no man could equal him. Once he has the popular will on his side the rest should be easy, if he adheres strictly to the practical.

One of the most important items is the estimated cost of the lines. For rough calculation the Chinese li (1,458 English feet) may be taken as one third of a mile. Dr. Sun's scheme, 200,000 li is about 67,000 miles in round numbers, and his estimated cost is \$6,000,000,000 silver, or roughly \$3,000,000,000 gold. This gives an average cost of \$30,000 silver per li, or \$90,000 silver (\$45,000 gold) per mile. The cost of loan built railways in China has generally exceeded this figure, while less pretentious lines constructed under native management has been much lower. Eliminating many of the expenses attached to the ordinary Chinese railway loan, a fair average estimate of the cost of building and equipping a mile of standard gauge railway in China, is exactly the figure quoted by Dr. Sun. Some lines across level country might be built cheaper, and some of the mountain sections at a cost much higher. If China had her own engineers with the experience of Jeme Tien-yu, Yen Te-Ching, K. W. Kwong, K. S. Loh and others, enabling her to dispense entirely with the service of foreigners, the lines could be constructed at an average of \$30,000 gold per mile. The world's great construction firms like, J. G. White

& Co., Pearsons' or Paulings', with their experience in Asiatic railway construction would undoubtedly be glad to contract at an average price of \$40,000 gold per mile for the construction of a complete system. So it may be accepted that Dr. Sun's estimate as a basis for loan or construction negotiations is a sound one.

The plan as outlined is so extensive and comprises so many features conflicting with other interests, that even partial success can only be secured through the exercise of the most careful diplomacy and financial shrewdness. The construction of new railways in China, is the most difficult problem confronting the new government. It was so under the old regime, and the revolution has not altered conditions to any great extent. It was the rock on which the old ship of state was wrecked, and unless a safer course is steered in the future, the new bark will also be swept by the currents straight for the reefs and be split asunder without warning.

The policy of foreign powers in China finds expression in the history of her railway development, and the construction of any new railway conflicting or competing with their existing lines and future schemes, has met in the past with firm opposition. It is not safe for China to construct railways in certain sections of her vast territory. As long as her officials content themselves with dreams, and no attempt is actively undertaken to put into practice the schemes for constructing such lines, the interested foreign Powers preserve silence and refrain from interference. The past is a safe guide for the future, and we know that when certain railway projects assume tangible form, and loan negotiations for their construction are opened with some hope of a successful issue, the polite cloak of diplomacy is discarded, and China is warned in no uncertain terms, what will happen if the scheme is not abandoned.

The construction of other lines are hampered by the existence of treaties, concessions, understandings, and loan contracts to such an extent that a thorough and intimate knowledge of the many delicate points involved is essential to avoid a clash with foreign commercial interests through their respective legations. In addition to the perplexities arising from the collision with foreign political and commercial interests, there remains the extremely disagreeable and dangerous task, to the Chinese official at least, of finding an amicable and equitable solution to the conflict between the Central and Provincial governments. The astute officials of the old regime repeatedly shirked this problem, and one by one, Presidents of the old Railway Board, quietly quit their lucrative post rather than incur the certain hostility of the Provinces, by an attempt to infringe on their rights. It remained for Sheng Kung-pao the last Minister of Railways under the Manchus to put into effect the Railway Nationalization scheme. The revolution was precipitated. To appease the wrath, of the provinces, the Central Government offered up Sheng as a sacrifice. He was cashiered and anathematized in Imperial Edicts, and barely escaped with his life to Japan.

The country has been so occupied with other important matters since the revolution, that the great question involving the relation of the Provinces to the Central Government has been temporarily shelved. Before any great railway scheme can be safely put into practice, this matter must be settled to the satisfaction of both sides and incorporated in the new constitution, otherwise there will be a continuous conflict between the Central and Provincial authorities concerning the construction and regulation of the railways. Dr. Sun has the confidence of the Southern Provinces, and there is little doubt but that he could secure their adhesion to and permission for any scheme he might originate. It is doubtful however if any other man in China could reconcile the various elements, and if sickness or death intervened to terminate Dr. Sun's connection with the great plan, is there another man who embodies his qualities and could take up his great work and carry it through?

Dr. Sun's scheme as reported embraces three new trunk lines, North, South, and Central, in addition to many branches or feeders connecting the smaller cities with the proposed and existing systems. In the execution of this scheme there are powerful foreign and domestic political influences to overcome, existing railway rights to adjudicate upon, intricate financial problems and terms to determine, and stupendous engineering obstacles

to surmount. By a careful analysis of these opposing influences, we can arrive by a process of elimination at a fair appreciation of the value of Dr. Sun's scheme and its chances of success.

Dr. Sun's plan includes the construction of a northern line commencing at Chinwangtao, round Liaotung into Inner and Outer Mongolia to Ulanhai. In other words the Northern system is to be constructed in opposition to the rights either acquired or otherwise arrogated to themselves by Russia and Japan. The Peking agreement of December 22nd, 1905 entered into between China and Japan contained a secret clause which bound China, not to construct, prior to the recovery of the South Manchurian Railway any main line in the neighbourhood of and parallel to that railway, or any branch line which might be prejudicial to its interests. This self denying clause, in which China in effect surrendered her sovereign rights to construct railways in Manchuria, was made public and successfully invoked by the Japanese Government to obstruct and cause the abandonment of the projected Fakumen Railway, a branch line of the Northern Railways from Hsinminfu to the market town of Fakumen. China had entered into a signed agreement with a British financial corporation to supply the funds and contracted with a British construction firm to build the line. China's undoubted intention was to test the strength of the secret agreement referred to, and if Japan acknowledged her right to build the Fakumen extension, the line was to be carried on northwards towards Changchun.

Japan's railways already connect up the main commercial centers of South Manchuria and with the completion of the Chino-Japanese Kirin-Changchun line, and its prolongation to the coast at Hunchun by Japan, there is little scope for further commercial lines in this province. It is true that China could and would be allowed by Japan to construct a few insignificant local feeders to the South Manchurian system, but these would have no bearing on the general scheme, nor be of sufficient importance to merit the consideration of foreign capitalists.

Dr. Sun's schemes provide for the extension of the Kirin Changchun line, northeastwards to Ninguta, with a line from this point south to Hunchun, and also for a branch line from Kirin extending southwards to the Chentaotao district on the Yalu.

Section b, Clause 3 of the Convention between Japan and China regarding the Hsinmin-Mukden and the Kirin-Changchun Railways signed at Peking April 15, 1907 provides as follows:—

"If the Kirin-Changchun line should hereafter build branch lines or an extension, the construction of such lines shall rest of right with the Chinese Government, but, if there shall be a lack of capital, application should be made to the South Manchurian Railway Company for an arrangement. Should China, however, appropriate funds herself for the construction of any other railway lines than these mentioned, it shall not concern the South Manchurian Railway Co."

The Manchurian Agreement of September 4th, 1909 furthermore provided as follows:—

"The Government of China shall undertake to extend the Kirin-Changchun Railway to the southern boundary of Yenchi, and to connect it at Hoiryong with a Korean Railway, and such extension shall be effected upon the same terms as the Kirin-Changchun Railway. The date of commencing the work of proposed extension shall be determined by the Government of China, considering the actual requirements of the situation and upon consultation with the Government of Japan."

In view of the immense strategic importance attached to these railway projects, Japan would never consent to forego her undisputed rights to finance and construct them. Dr. Sun's idea of extending the Kirin Railway to Ninguta, and building a branch from there to Hunchun, reopens the delicate question of Russian and Japanese rights in Manchuria. The extension according to treaty must be financed by Japan and as it cuts the Russian Chinese Eastern Railway half way between Harbin and Vladivostok, the Russian Government would immediately protest against this danger to her strategic position.

As to Northern Manchuria, Russia has prohibited China in the most emphatic terms from constructing railways which might be considered a menace to her strategical position or as likely to compete with the Chinese Eastern Railway. In seeking to circumvent the self-denying clause of the secret

protocol to the Peking Agreement and ascertain the exact position of Russia and Japan in regard to Manchuria, China contracted with an American syndicate to furnish the funds to build a line traversing Manchuria north and south, and arranged with a British concern to construct the line at a fixed rate per mile. This was known as the Chinchow-Aigun Railway project. The official communications from the Russian Minister at Peking to the Waiwupu, bearing the dates of February 4th and March 4th, 1910 express in no uncertain terms Russia's position. The result of this attempt to exercise her sovereign rights within her own territory created an issue in which China's right to decide upon the course of railway construction in Manchuria and Mongolia was denied by Japan and Russia, this principle receiving the moral support of their allies, Britain and France.

In the official memorandum of M. Korostovetz, the Russian Minister, to the Waiwupu bearing the date of March 4th 1910, he proposed as an alternative scheme, the construction by foreign capitalists, of the Trans-Mongolian line, from Kalgan to Kiakhta but stipulated that the section from Kiakhta to Urga should be reserved to Russia. Conditions have materially altered in two years and now we find an independent Mongolia, recognized and protected by Russia, with the latter Power already negotiating with French financiers for the construction of railway lines within the new independent state, under a Russian guarantee as to the interest on the construction loan. In his speech before the Press Association at Peking, Dr. Sun referring to Russia's reported activity in the matter of the Kalgan Kiakhta line with French capitalists asked the question. "When this scheme is laid before us shall we agree to it or refuse it?" "On the other hand, if we at once start to prepare to construct the line ourselves, we shall be able not only to check the Russian aggression, but also to secure the same French capital for our own use." Bearing in mind Russia's attitude in the Chinchow-Aigun railway matter, and her actions of the last few months in regard to Mongolia, it seems hardly likely that China's wishes will be consulted at this time, and when Russia decides to build the line, it will be too late for China in her weak and disorganized condition to do more than protest. Dr. Sun's plan is to finance such lines as the Kalgan-Kiakhta by foreign capital, and he hopes to forestall Russia, by entering at once into financial negotiations to build this line, expressing the hope that the same French capital can be secured.

Dr. Sun is an optimist and has an overwhelming faith in the ultimate triumph of those principles of justice that, unfortunately have no existence in the world politics of to-day, especially where the interests of his country are concerned. That Dr. Sun can retain his trust in human altruism is eminently creditable to him as a man, but renders him liable to be mistaken in his interpretation of existing facts.

If Russia as reported, is negotiating with a financial syndicate, and especially if it be French, and stands ready to guarantee the interest on the cost of constructing railways in Mongolia, it implies that Russia has already decided to annex the territory, and will brook no interference with her plans. It also signifies that she has the firm support of France, her financial backer and ally. If Dr. Sun believes that a French political loan with the Russian government guarantee can be diverted to the uses of China, in her present financial straits and unrecognized status and employed in frustrating the uses for which it was intended, then he has failed to grasp the full significance of recent political events affecting the future of China. It may be safely assumed then, that future railway construction in North and South Manchuria, will be undertaken only by or with the consent of Russia and Japan, and China will be excluded from any participation in the development of these provinces.

The same Powers are now engaged in extending their policy of "peaceful penetration" into Inner and Outer Mongolia, and the time cannot be far distant, when notice will be served on China, that any effort on her part to restore her authority over these dependencies will be considered as an unfriendly act or words to that effect. So we may eliminate Outer Mongolia at least, as a field for the extension of Chinese railways in the immediate future.

Two or three years ago, when Russia's railway program in Central Asia was being discussed by the Duma, the Chinese

Government awoke from its slumber, and took sufficient notice to authorize the Railway Board to make a survey and report on certain lines in Mongolia to counteract the Russian menace, and then yawned and slid back into the sleep of centuries. The FAR EASTERN REVIEW at that time fully described the gravity of the situation. That was China's opportunity. She let it slip. Through it she has lost Mongolia.

Any comprehensive scheme for a national system of Chinese railways, must have for its objective the development of the country on a broad scale to facilitate transportation of crops and products to the nearest seaport for exportation. Railways must have some outlet to the sea, and open ports are essential to the development of the country and profitable operation of the railways. In the elaboration of any comprehensive railway scheme, it is natural to suppose that the Chinese government will make some provision to build up a port entirely within its own jurisdiction, and under its exclusive control. It is inconceivable to suppose that China would contract enormous loans for the furtherance of any policy tending to strengthen and enrich the foreign interests holding the keys to her interior through the possession of the best harbours on her Coast. This is a most important and vital question, and before we follow Dr. Sun's scheme any further, an elucidation of the situation involved is necessary to a better understanding of what China has to contend against. The question of the control of open ports under her own jurisdiction is of such paramount importance to China's future progress, that all railway projects must perforce be co-related to it. China has been despoiled of her most valuable deep water harbours. Dalny and Port Arthur in the North are under lease to Japan, Kiaochow to Germany, Wei-hai-wei to Britain, Shanghai is under an International Council, Hongkong has been ceded to Britain, and France holds Kwangchow Bay.

Two years ago when the scheme for constructing the Central trunk line was seriously considered by China, the question of a suitable port under her own jurisdiction, located on the eastern coast, became of prime importance to the success of the project. The little unknown port of Haichow, was selected as the only spot on the coast, which could be developed as the terminus of the line to Kaifeng and beyond. The situation then created was set forth in an article entitled "Railway Strategy in China" appearing in the June 1910 issue of THE FAR EASTERN REVIEW. As conditions have not changed we reproduce herewith that part of the article which serves to illustrate our point:—

"It is a significant fact that China has been deprived of all the valuable ports situated on the northern stretch of her coast. Shanghai, the great commercial center of the Empire, is ruled by an International Council, and the Central Government has no control over its affairs. Tsingtau is held by Germany, Weihaiwei by Great Britain, Dairen and Port Arthur by Japan; this leaves to China the outlets at Newchwang, Tientsin and Chefoo. Newchwang as a port is worthless. Eighty years ago the spot on which Yinkow now stands was at the bottom of the sea, and it is now twenty miles inland from the mouth of the Liao River. The encroachment of the land on the Liao-Gulf is going on so rapidly that any port at the mouth of a river can never be depended on as a permanent outlet for trade. In addition, the Liao River at Newchwang is frozen over for at least four months of the year, and all commerce is checked until the thaw, and then only shallow draft coasting vessels can reach the town.

Chinwangtao is an artificial ice free port owned and operated by the Chinese Engineering & Mining Company. Tientsin which ought to be the great port for North China is handicapped by the same disadvantage as Newchwang, and any scheme of improvement embracing a large expenditure is only a waste of money. The silt carried down by the Haiho is so great that constant dredging is necessary to keep a channel open for light draft steamers. Large vessels have to lie off shore as far as nine to ten miles, so Tientsin as a port can never figure in any important scheme for the development of the Empire, or the advancement of a national policy.

There remains Chefoo which might be made a great Chinese port, but while the depth of water is ample, the harbour is open to the heavy northern gales, and a breakwater is imperative to make it safe for vessels during the winter season. But at the best, even after a large expenditure of money on improvement schemes, the harbour of Chefoo could only accommodate a very limited number of vessels. Chefoo's prominence as a port has rapidly declined since the opening of Tsingtau and the construction of the Shantung Railway. The trade of the province, which once flowed through Chefoo, has been diverted to Tsingtau, and the only hope of the port is the building of a railway which will terminate at some point on the existing Shantung Railway. It is quite clear that such a road might menace the prosperity of Tsingtau, and diminish the through traffic of the German line, and as it conflicts with German interests, must meet with their disapproval. Chinese promoters have several times endeavored to raise the funds to construct this line from Chefoo to Wei-hsien, but up to date have been unsuccessful. Under the terms of the Kiaochow Convention, if the

Chinese desire foreign capital to develop the province, they must turn to Germany, and in view of the menace to her own interests, it is quite natural that she would withhold financial assistance to such a scheme. While the Chinese are free to apply elsewhere for aid in the event of German refusal, such action on their part would undoubtedly result in complications. At all events, Chefoo could never enter into any plan of the Chinese Government of building up a port under its own control, for as long as the Kiaochow Convention holds good, the proposed railway line will only have a local importance, and would be useless to China in the advancement of any broad national policy for the development of the Empire.

Weihaiwei, leased to Great Britain, has no future as a trade port. So it is quite clear that China is at present deprived of the only really good harbour on the Northern coast through which she could divert the great trade of the Central provinces. Japan holds the best harbours for the outlet of Manchurian trade, and Germany occupies the port of Tsingtau, commanding the desirable trade routes from the sea to the great central provinces. If foreign railway programs are permitted full scope to develop, the logical sequence is that China will be forever barred from controlling a suitable deep water base for the furtherance of her own policy.

Some months ago, it was reported that the Chinese Government had opened the port of Haichow, a hitherto insignificant harbor on the north-eastern coast of Kiangsu Province just south of the Shantung border. This report, however, lacks official confirmation. The reason for such a step is now made clear by the imperial sanction to a scheme for building a railway from Kaifengfu, through Suchowfu, Tsingkingfu and thence to Haichow.

Since the above was written, the Yangtze port of Pukow, has assumed considerable importance as the southern terminus of the Tientsin-Pukow Railway. The Yangtze river is navigable for ocean steamers, and the necessary wharves and terminal facilities could be economically constructed to enable the port to handle the large import and export traffic from those sections of China not within the influence of Tsingtau. Haichow could only be developed at a large expenditure, and artificial protection would have to be provided against the heavy northerly and easterly gales. For strategic and commercial reasons therefore, it would seem that the only port open to China in the north as the outlet for any large system of state owned railways, and one that would remain under her undisputed control, is that of Pukow on the Yangtze.

To the south of Shanghai the ports of Foochow, Amoy and Swatow remain under the jurisdiction of China. The fact that China has retained jurisdiction over these is sufficient evidence of their strategic worthlessness. These ports may serve as the termini of local railway lines tapping the adjacent hinterland, but as far as foreign trade is concerned they will always be subsidiary to Hongkong or Shanghai. Hongkong's position commanding the approaches to Canton, coupled with her natural advantages as the only deep water port south of Shanghai gives her control of the entire trade of that part of China, and the Colonial Government has burdened itself with a large debt to insure the commercial supremacy of the port, by the construction of the Kowloon-Canton Railway at a cost of nearly £50,000 per mile. Any elaborate scheme for the construction of railways radiating from Canton, must necessarily strengthen this position. To offset these advantages China could improve the approaches to the West River, dredge the channel, and develop a deep water port of her own at Whampoa. And this must be done, unless she is willing to burden herself with a heavy debt for the glorification of Hongkong. We understand that Dr. Sun has given this phase of the problem serious consideration and his plans contemplate certain improvements that will free Canton from her dependency on Hongkong. The question then naturally arises, will the powerful British financial interests support a scheme of this nature tending to diminish their national commercial supremacy in South China? And yet a Southern port under China's jurisdiction is essential to the successful development of her railways. Otherwise the trade of Yunnan will flow out to the sea through French territory at Haiphong, and the vast commerce resulting from the proposed new trunk lines will be diverted through Britain's vantage point at Hongkong.

With the above exposition of the relation between port terminals and railways in China we may now turn once more with a clearer understanding to Dr. Sun's schemes and analyze the railway situation in the metropolitan province of Chihli. On the 10th of October, 1898, the Chinese Government entered into a loan contract with the British and Chinese Corporation Ltd, to advance £2,300,000 on the security of the then Peking-Newchwang Railway. The terms and provisions of this agreement are such that to a certain extent, it gives

British interests the right to dictate China's railway program in Chihli for a period of forty-five years. Clause 3 of this document reads:—

"Should it be decided hereafter to construct branch lines or extensions connecting with the lines herein named, their construction shall be undertaken by the Railway Administration, and should the funds of the Railway Administration be insufficient for that purpose, it shall apply to the Corporation for the same."

When the management of the Northern Railways was restored to China in 1912, an additional agreement was entered into with the British authorities which amplified and defined the original contract. Article 5 of this Supplementary Agreement reads:—

"Under Clause 3 of the Agreement dated October 10th, 1898, it is stipulated that the construction of branch lines or extensions shall be undertaken by the Northern Railway Administration, and the intent of this stipulation is hereby confirmed in order to secure the existing interests of the railways. It is therefore agreed that the construction of any new railway within a distance of eighty miles of any portion of the existing lines, for which concessions have not been signed previous to the date of this Agreement shall be undertaken by the Administrators-General of the Imperial Northern Railways."

Such lines as the following:—

A northern line from Peking or Fengtai to the Great Wall;

A chord line from Tungchow to Kuyeh or Tongshan;

A line from Tientsin to Paoting Fu;

shall not in view of the interest of the Imperial Northern Railways be allowed to fall into other hands."

In other words these two clauses permit the Administration of the Northern Railway to construct extensions to the existing lines, out of the surplus of the Railway, but if these should be insufficient and a foreign loan becomes necessary, China is bound to apply to the British and Chinese Corporation for the funds. The Peking-Kalgan railway has since been built under these conditions, but the chord line from Peking (Tungchow) to Tangshan which would lessen the distance from the capital to the winter port of Chinwangtao and Manchuria, and the line from Paotingfu to Tientsin has never passed the paper stage. Both of these projects are approximately 90 miles long, and their construction would satisfy the railway demands of Northern Chihli for years to come.

A line from Peking or some point on the Kalgan Railway to Chengtehfu (Jehol) the capital of Inner Mongolia, a distance of about 100 miles, received serious consideration from the Manchu authorities in late years. Jehol has no trade to speak of. Its importance arises from the fact that an Imperial Palace used as a pleasure retreat for the Manchu Emperors and court is there located. With the downfall of the Manchus, Jehol loses much of its prominence. Any railway connection with this section of the country must have its outlet at some point within the sphere of influence covered by the British and Chinese Corporation agreements. China can only build these lines with her own money, and if foreign funds are required the British Corporation controls the undisputed right to advance them.

The natural outlet for Inner Mongolia (or Northern Chihli) follows the course of its rivers in an easterly direction, thus tending to direct the flow of trade into the territory served by the South Manchurian Railway. Signs are not wanting that if Mongolia becomes irretrievably lost to China, Japan is to receive as her share that part to the North of the Great Wall, comprised within the provincial jurisdiction of Chihli, and known as Inner Mongolia. It is significant that Dr. Sun's Northern trunk system originates at the little open port of Chinwangtao the property of a British corporation, situated just within the Great Wall, and from there strikes northwest into the heart of Mongolia. This is undoubtedly a safer scheme at the present time than adhering to the old plan of constructing a new port at Lienshan (Hulutao) and starting a railway from Chinchow, to tap the districts of Inner Mongolia. Japan can offer no objection to such a scheme, and the British government must support a British loan for the construction of at least 80 miles of the line inland from Chinwangtao. If Dr. Sun loses

no time in opening negotiations for a loan to construct a line swinging around the larger market towns of Inner Mongolia and terminating at Kalgan, he may hope for success, and consolidate for all time China's hold on this threatened section of her territory. The line may not pay its interest charges for years, and must be classed as a political or strategic road, but as the country is developed it will prove as profitable as any other line in China.

Such a line would shorten the distance by over 100 miles between Kalgan and the sea, and in connection with the enlargement of the port and terminal facilities of Chinwangtao would reduce the heavy charges on the freight and export products of Mongolia which now flows through the warehouses of Tientsin preliminary to shipment abroad. The acquisition of the port of Chinwangtao by the Chinese Government, would obviate the large expenditure on the Lienshan or Hulutao projected harbour works and insure a safe base for her northern system of railways, free from any possible political interference for years to come.

The extension of the existing Kalgan railway through Northern Chihli to Tatungfu and thence northwest to the great frontier mart of Kweihsuacheng, has been surveyed and is now under construction with the funds furnished by the surplus earnings of the Northern Railway. Unless Russia recedes from her position as regards Mongolia this is the present limit of possible railway construction by China in Northern Chihli.

Just south of Chengtingfu on the Peking-Hankow trunk line, the Cheng-tai Railway branches off to the west, terminating at Taiyuanfu, the provincial capital of Shansi. This line was constructed under a loan agreement entered into in 1903 with the Russo-Chinese Bank. It was a commercial undertaking in which the Russian Government was apparently not concerned. The Russian Bank acted as the agents of the French Group or section of the Bank, who were entrusted with the construction and operation of the line. Belgian capital was also largely interested in the combination.

In the terms of the loan agreement appears a clause as follows:—

5. *"During the whole 30 years or-and while the loan is unredeemed, the high authorities of Shansi shall, at the request of the Company, interdict the construction of another railway or other mechanical means of transport between Liu-lin, Chengting and Taiyuan-fu, as such would be detrimental to the interests of this railway."*

The Memorandum on French Railway and Mining Concessions secured by France and French Companies in China discloses that the Chengtai Railway concession contemplated the extension of the line to the southwest, implying the existence of some additional or secret understanding not specified in the agreement. These claims were subsequently brought to the notice of the Chinese Government after the completion of the line to Taiyuanfu in a despatch from the Belgian Minister, revealing the fact that Sheng Kung-pao had promised the French Company in 1904 that an extension of the line from Taiyuanfu to Sianfu and a short branch to Pingting-chow would also be constructed with their capital. The Belgian Minister desired to inform the Chinese Government that the Company was quite willing to conclude the agreement in fulfillment of that promise. As there was no official record of this arrangement on file at the Waiwupu, the matter was referred to H.E. Sheng for confirmation. And there it has rested.

There are good reasons to believe that the Belgian and French claims had some basis in fact, or they would not have been advanced. Sheng Kung-pao had full authority in railway matters at that time, and his promise was binding on the Government. Therefore as a matter of equity, if foreign funds are secured for the extension of the Chengtai Railway beyond Taiyuanfu, China is bound to apply first to the Russo-Franco-Belgo Group. The only alternative lies in constructing the line with native capital, and this way out of the tangle has found effect in the organization of a Shansi provincial concern called the Tungpu Railway Company, for the purpose of building and operating a railway from Tatungfu in the North to Puchow in the Southwest corner of the province. This line would connect with the Kalgan extension

at Tatung, with the Chengtai line at Taiyuan, and with the projected Lotung section of the Central trunk system at Tungkwan. The company has called in the first installment on its shares, and at the outbreak of the revolution was engaged in ordering rails, bridges and rolling stock. It is doubtful, however, if the province can ever raise the \$20,000,000 gold necessary to construct the 450 miles of line. A section or two may be built and then the funds will peter out and an effort made to contract a loan with some syndicate other than the one having the first option. The Chengtai railway is meter gauge and can have no relation to the broad gauge system proposed for the rest of the country. So here we find another hard nut for Dr. Sun to crack in building lines through Shansi.

The section of China lying between the provinces of Chihli and the Yangtze River, comprises more delicate railway questions than all the rest of the country combined and the struggle for control by antagonistic foreign interests through the exploitation of railways has been constant and bitter.

The province of Shantung in which is situated the fine town and protected harbour of Tsingtau, is the natural outlet for the trade of Southern Chihli, Honan, Shansi, Kansu and beyond. The possession of the one good harbour on the coast north of Shanghai, should make Tsingtau the great distributing center and railway terminal of North China.

But Tsingtau is leased to Germany, who has in addition preferential rights on all railway and development schemes in the province of Shantung. The agreement between China and Germany in regard to Railway and Mining concessions in Shantung contains the following clauses:—

1. *The Chinese Government sanctions the construction by Germany of two lines of railway in Shantung. The first will run from Kiaochow and Tsinan-fu to the boundary of Shantung province via Wei-hsien, Tsinchow, Pashan, Tsechuen, and Suiping. The second line will connect Kiaochow with Chinchow whence an extension will be constructed to Tsinan through Laiwuh-sien. The construction of this extension shall not be begun until the first part of the line, the main line, is completed, in order to give the Chinese an opportunity of connecting this line in the most advantageous manner with their own railway system. What places the line from Tsinan-fu to the provincial boundary shall take in en route is to be determined hereafter.*

"If at any time the Chinese should form schemes for the development of Shantung, for the execution of which it is necessary to obtain foreign capital, the Chinese Government, or whatever Chinese may be interested in such schemes, shall, in the first instance, apply to German capitalists. Application shall also be made to German manufacturers for the necessary machinery and materials before the manufacturers of any other Power are approached. Should German capitalists or manufacturers decline to take up the business, the Chinese shall then be at liberty to obtain money and materials from sources of other nationality than German."

The construction of the railway from Tsingtau to the provincial capital at Tsinanfu, was the direct outcome of the above concession. On its completion, Germany settled down to a fixed program to derive the full pecuniary advantages of her monopoly. The splendid harbor of Kiaochow had been converted into a first class naval station with a floating dock and repair shops, and the model German city of Tsingtau—the gem of the Orient—was laid out and built up on scientific lines. A system of covered wharves, alongside of which the largest mail steamers could warp, were constructed as freight terminals for the railway, and every energy was then expended to attract commerce to the new free port. It soon became apparent that the poverty stricken province of Shantung, would never justify in trade returns the heavy expenditures on Tsingtau, unless the railway could be extended westward to tap the richer sections of the hinterland. To all overtures for such a concession, the Chinese Government turned a deaf ear.

In 1897, a year previous to Germany's lease of Kiaochow, a Chinese merchant was granted the right to construct a railway from Tientsin to Chinkiang, and concluded a loan for this purpose with an Anglo-American syndicate in August of the following year. The acquisition by Germany of preferential rights in Shantung earlier in the same year, precluded the

passage of such a line through this province, and the difficulty of finding another route caused the abandonment of the scheme. Germany finally secured the concession for building the northern half of this line, and British interests the southern section. In permitting Germany to build that portion of the line within the province of Chihli, or from Tientsin say to Tehchow, a distance of about 90 miles, the British and Chinese Corporation relinquished their rights obtained under the loan contract with the Northern Railways and allowing Germany thereby to gain an entrance into Tientsin and North China, and divert the trade of that section towards Tsinanfu and over the rails of the Shantung railway to Tsingtau. When Tientsin is closed by ice during the winter months, the export trade of North China is paralyzed, with the exception of the small volume which finds its way out of the harbor of Chinwangtao. A glance at the map will show that much of the trade now enjoyed by Tientsin, could be diverted to Tsingtau with considerable advantage to a vast section of North China, and consequent profit to Germany. The construction of any line or lines connecting the Northern or German section of the Tientsin-Pukow with the Peking-Hankow Railway, would create a revolution in the old established channels of trade, and instead of flowing northwards to Peking and then down again to Tientsin the products of Southern Chihli, Shansi, Shensi, and Honan would follow the shortest and most direct route to the sea, over the German lines to Tsingtau. German diplomacy has been keenly alive to this fact, and the German Minister has on several occasions approached the Chinese Government to secure a concession to construct a line to connect Chengtingfu with Techow and Kaifeng with Yenchow. According to Mr. P. C. Kent, in his valuable book on "Railway Enterprise in China" the German Minister has only succeeded in arriving at an understanding with the Chinese Government to the effect that in the event of the Chinese Government deciding upon the construction of these lines and requiring the assistance of foreign capital, German capitalists will be allowed the first refusal of the concession. "A glance at the map is sufficient to indicate the commercial importance of these railways to Shantung and Tsingtau." Their construction would give Germany a through rail connection to Taiyuanfu and beyond, dominating the carrying trade of Shansi, and the Yenchow-Kaifeng connection would place the Kaifeng-Honan (Pienlo) Railway and the proposed central trunk line tributary to Tsingtau and permit this port to compete with Hankow for the Yangtze Valley trade.

With the thoroughness characterizing her foreign trade policy, Germany has carefully protected and insured her position in Shantung, and as the construction of these lines will ultimately become imperative for the development of China, she may well afford to bide her time with the calm assurance that her plans will mature. Her position is further safeguarded by the terms of the Tientsin-Pukow Loan Agreement, Clause 19 of which reads:—

19.—*Branch lines in connection with the railway line mentioned in this Agreement may be built by the Imperial Chinese Government with funds at their disposal from Chinese sources, if thought advisable, and if foreign capital is required preference will be given to the Syndicate."*

The above terms in connection with the understanding arrived at between the Chinese Government and the German Minister once more attests to the impregnable position of Germany. On one hand, if foreign money is used to construct these lines China must give the refusal to German financiers, and on the other, any branch lines or extensions to the Tientsin-Pukow line, must be the subject of negotiations with the German syndicate. As Baron von Bulow aptly stated, "Germany has secured in Kiaochow a strategical and political position which assures us a decisive influence on the future of the Far East. From this strong position we can look with complacency on the development of affairs. We have such a large sphere of action and such important tasks before us that we have no occasion to grudge other nations the concessions made them."

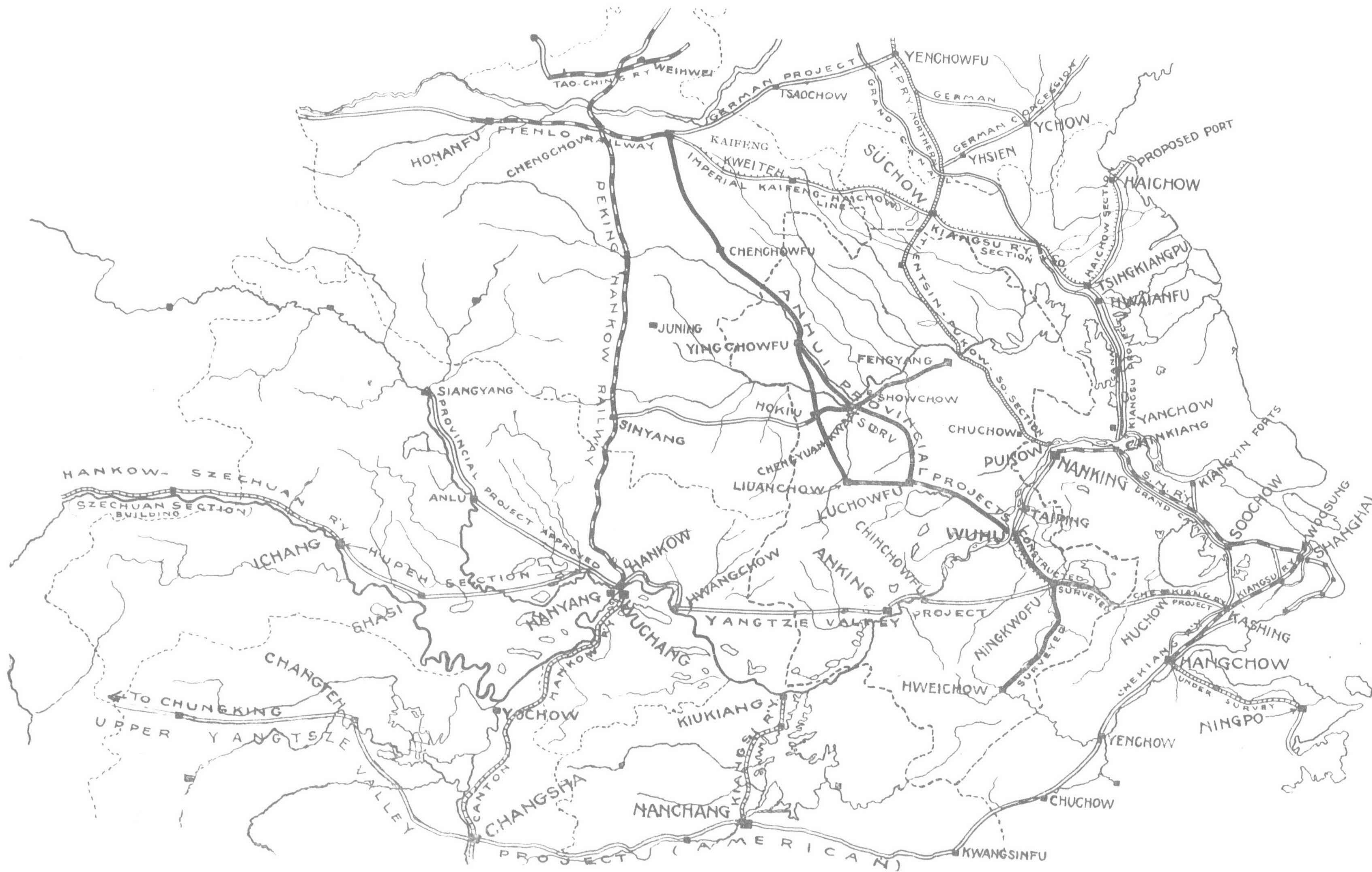
The Chinese have been endeavouring for some years to raise sufficient capital to construct a railway connecting the



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THE FAR EASTERN REVIEW'S SKETCH MAP OF RAILWAYS IN CENTRAL CHINA, SHOWING THE KAIFENG-HAICHOW SCHEME

The line of the proposed Kaifeng-Haichow railway is traced in black, except that portion between Suchowfu and Tsingkiangfu, which is to be constructed by the Kiangsu Railway Co., a Chinese concern. The German sphere of influence in Shantung Province is shaded. The project of the Chinese Government, as outlined on the map, clearly shows its great political importance and bearing on the ambitions of Germany, and the prospects of the British lines, and also its relation to the great Trans-Asiatic trunk line approved by China. The Peking Syndicate railway claims to an outlet from the mines to the Tientsin-Pukow railway are practically nullified by the new Chinese scheme. The German project to link the Tientsin-Pukow line with Kaifeng via Tsochowfu is also without value in view of the new road. It will be noted also that Haichow stands in the same relation to the Yangtsze River junk traffic, as does the great port of Shanghai, and much of this can be diverted through the Grand Canal to Tsingkiangfu and through (published prior to the signing of the Hukuang Loan Agreement, and fails to show the German section of this line.)



MAP ILLUSTRATING RAILWAYS IN CENTRAL CHINA WITH SPECIAL REFERENCE TO THE PROJECTS OF THE ANHUI PROVINCIAL RAILWAY COMPANY, WHICH ARE SHOWN IN BLACK LINES

port of Chefoo with the town of Weihsien on the line of the Shantung Railway, a distance of about 170 miles. Before the construction of the German railway and rise of Tsingtao, the treaty port of Chefoo controlled the commerce of the province. This has since been gradually diverted to Tsingtao and year by year sees the commercial importance of Chefoo as a port diminishing. The merchants of Chefoo believe that a Chinese owned railway tapping the German line at Weihsien would restore the fortunes of the port, by attracting trade to that outlet. A glance at the map will show that this hope is a vain one, and such a line would only be of local importance and exert influence over a very small territory. Instead of a commercial blessing, it might prove otherwise, for the German line by a legitimate exercise of discriminating rates for through shipments to Tsingtao could attract considerable trade that now flows out through Chefoo. The Chinese accuse the Germans of obstructing and opposing their efforts to construct this line for the restoration of Chefoo's prosperity. They may have good grounds for the accusation. On the other hand, it would not make a particle of difference in the situation, for as long as Germany controls the Shantung railway, through shipments from the interior destined for export or *vice versa* must be carried over its rails, and during the life of the 99 year lease, there is no way to circumvent or evade her control over freight rates in Shantung. The Chinese may ultimately construct the Chefoo-Weihsien railway, but there the matter ends. It is a purely local affair subsidiary to and dependent upon the German line for such trade crumbs as it may feel disposed to throw its way. This line might ultimately prove a profitable undertaking from the passenger receipts.

There is just one avenue open that China might follow in order to liberate her Northern commerce from passing over the German rails to Tsingtao. Instead of constructing a railway from Chefoo to Weihsien, the line could follow the coast, skirting Laichow Bay, striking westwards through Pinchow and Wutingfu to Tehchow connecting there with the Tientsin-Pukow line and the projected connection with the Peking-Hankow line at Chengtingfu, making possible a through Chinese trunk line from a Chinese port to Shansi, Northern Chihli and beyond. With several millions expended on port works, breakwater and other improvements at Chefoo independent of the railway, and about \$13,000,000 gold more to construct the 320 miles to Tehchow and another \$4,500,000 for the 110 mile connection to Chengtingfu, with a possible \$3,000,000 gold for a bridge over the lower reach of the Yellow River, or a rough total of \$25,000,000 gold, China could control her own northern port and revive the prosperity of Chefoo. By lower freight rates, discrimination against the German line and a patriotic campaign to patronize a national railway such a scheme if possible of realization would be profitable, provided, however, that Chinese patriotism rises to the heights of subscribing the entire capital from within the country. If they fail, and seek foreign assistance, the Germans must be first consulted. A loan for \$25,000,000 or even half that amount, to be employed in opposition to the national programme, would never receive consideration from any German syndicate.

It may be taken then for granted that there is no scope for the expansion of a purely Chinese national railway policy in Shantung, or those regions tributary thereto embraced under the loan agreements and understandings arrived at between Germany and China, so we may therefore eliminate Shantung from any place in such a scheme, until such time as Germany is willing to forego or relinquish some of her advantages.

The region to the immediate south of Shantung in North Kiangsu and Honan and westwards in Shansi and Shensi along the Yellow River valley, embraced in the territory tributary to Chinese projected central trunk line, contains some interesting railway puzzles to work out. In the northern horn of Honan province, is found the Tao-Ching Railway, built under the terms of a mining concession granted by the Chinese Government to the Peking Syndicate in 1898. Clause 17 of this concession is as follows:—

"Whenever it may be necessary for any mine to make roads, build bridges, open or deepen rivers or canals, or construct branch railways to connect with main lines or with water

navigation to facilitate transport of Shansi coal, iron and all other mineral products from the province, the Syndicate on reporting to the Government of Shansi is authorized to proceed with the works, using its own capital without asking for Government funds."

This clause has been interpreted by the Corporation as conceding not only the right to construct a railway from the mines in Honan, to an outlet at Taokow on the Wei River, but also the right to a line from the mines to the nearest deep water navigation on the Yangtsze River. The first line was accordingly built, having a length of 96 miles. A survey southwards through Honanfu, to Siangyangfu on the Han river was made, but this was subsequently abandoned in favor of a line across the country to Pukow, on the Yangtsze, a distance of 350 miles. And this interpretation of the clause, was recognized by the Chinese Government. As compensation for the slight to British interests in ceding the Peking-Hankow concession to Belgium, the Chinese Government in 1898 granted the British and Chinese Corporation the rights to a railway commencing at Sinyang, a town on the Peking-Hankow Line, and terminating at Pukow on the Yangtsze. Later on, the same corporation received the concession for the southern section of the Tientsin line terminating also at Pukow. The conflicting situation so created was subsequently solved by a combination of the above mentioned syndicates under the name of the Central Chinese Railways, Limited for equal participation in all future railway development north of the Yangtsze.

The Sinyang-Pukow line is still on paper, and in time may be constructed. The Tientsin-Pukow line is completed. If the former concession is carried out, then the claims of the Peking Syndicate find expression in the rights covering a railway from the mines to some point on the British section of the Tientsin-Pukow Railway line north of Pukow. A glance at the map will disclose that these claims if allowed, will nullify the advantages of the proposed Chinese central trunk system. The point is, that the claims exist, and are recognized by the Chinese and British Governments, and cannot be set aside without compensation. In addition to these recognized claims it appears that the Chinese Government entered into certain contracts with other British interests dated 5th November 1899 and 3rd June 1902 in connection with the construction of embankments for waterways and railways in the Yangtsze and Yellow River Valleys. These contracts are held as binding on the Chinese Government, but the British Foreign Office has refused to recognize their validity or protect the interests of the holders. It appears that these contracts conflict with rights afterwards ceded to the recognized British syndicates and the refusal of Sir Edward Grey to intervene in favour of the superseded interests has provoked many bitter and adverse criticisms of his policy. We are not familiar with the specific details of the above contracts and their exact bearing on projected railways in the section of China under discussion. But the claims exist and undoubtedly will again be advanced for recognition whenever an opportune moment presents.

Just south of the Yellow river we find the Pienlo Railway in operation from Kaifengfu to Honanfu built under a loan agreement with a Belgian syndicate. This short road connecting the two important cities of Honan is the first expression of the much talked of Central Trunk line which will proceed westwards via Tungkwan, Sianfu, Lanchowfu and across Chinese Turkestan to the frontier cities of Kashgar and Ili. The first section westwards from Honanfu (Loyang) to Tungkwan is known as the Lotung Railway. From Kaifengfu eastwards the projected trunk line is known as the Kaifeng-Haichow Railway.

The Belgian Loan Agreement under which the existing section from Kaifeng to Honan (Pienlo) was constructed contains a clause as follows:—

Article 23.—Should the Compagnie Générale de Chemins de Fer et de Tramways en Chine finish satisfactorily the work for the railway from Kai-feng Fu to Ho-nan Fu, complying strictly with all the provisions of the present contract, and should the Chinese Government decide to extend the railway from Ho-nan Fu to Si-ngan Fu, the Director-General of the Imperial Chinese Railway Company agrees to come to an understanding preferably with, and to grant an option for the loan necessary for said

undertaking to, the *Compagnie Générale de Chemins de Fer et de Tramways en Chine* in conformity with the provisions and conditions of the present contract.

This undoubtedly gives the Belgian syndicate the first option on furnishing the funds not only for the Lotung section, but also as far as Sianfu, the provincial capital of Shensi, a distance of about 210 miles, necessitating an approximate expenditure of \$10,000,000 gold. On the completion of the line however instead of applying to the Belgian syndicate for a further loan to construct the extension to Tungkwan and Sianfu, the Chinese in their desire to dispense with foreign aid, determined to continue the work with their own funds. The people of the province organized a society styled the Honan Railway Investigation Company, with a capital of \$15,000,000 with shares at \$5 each. Their "investigation" included the construction of a line connecting Kaifeng with Tsinanfu via Yenchow, thus playing into Germany's hands. Warned away from this project by Peking, they investigated a line eastwards towards Suchow to connect there with a local line, and then after a lapse of three years they finally got down to business and decided on taking up the extension to Tungkwan, and reorganized the company as the Lo-Tung Railway Co. The amount raised by popular subscription was however insufficient to commence serious work although the market was flooded with inquiries for construction material. A loan was necessary. Did the Honan gentry turn to the Belgian syndicate in compliance with the contract of the Central Government?

Not they. They tried everywhere else, and finally realizing the impossibility of securing a foreign loan on their own terms, they made a contract with the Kung-i Bank for a 6.8 per cent Tls. 5,000,000 loan, which this bank having a paid up capital of only Tls. 200,000 tried in turn to negotiate with foreign syndicates. Up to the outbreak of the revolution the Lotung Railway Company had exhausted about every possible expedient to borrow money from everyone except the Belgian syndicate who undoubtedly stands ready to comply with the clause of the Kaifeng-Honan Contract giving them the first option. The extension of the section to Sianfu the capital of Shensi Province has failed so far to elicit any interest on the part of the Provincial gentry, and no funds have been raised for the purpose. The people of Honan who have contributed to the Lotung Company, have some equity which has to be considered in any future scheme, and it would appear that the Belgian syndicate's claim to finance the line in case foreign money is needed is indisputable.

It will be remembered that the Chengtai railway concession negotiated with China by a *Russian* Bank, was constructed by a *French* company, and the alleged rights to finance its extension towards Sianfu was advanced at Peking by the *Belgian* Minister, thus confirming the close community of interests existing between these three Powers for the advancement of a railway program in China. The rights to finance a line to Sianfu, from either direction therefore undeniably rest with this combination, and it is doubtful whether the three Powers concerned will entertain any alternative proposition tending to deprive their nationals of these acquired rights.

The construction of the central trunk line beyond Sianfu as far as Lanchow the capital of Kansu Province, a distance of some 350 miles, will necessitate another \$17,500,000 gold investment. While no one Power has acquired special railway rights in Kansu Province, Belgian influence is already very strong; the Mining adviser to the Provincial government is a Belgian.

From Kaifeng to Sianfu or perhaps to Lanchow, the construction of the central trunk line has some promise of being a profitable commercial venture, repaying within reasonable time the interest on its cost. From Lanchow westwards through the desert sands 1,600 miles to Ili, or 1,800 miles to Kashgar a railway must be financed under government guarantee as to principal and interest. The line would be purely political and cost approximately \$90,000,000 gold.

Does the importance of Chinese Turkestan, or Sinkiang justify the expenditure at this time of \$90,000,000 gold to solidify and maintain China's authority, without taking into consideration the certain annual guaranteed interest charge of at least

\$5,000,000 gold that will have to be provided until such time as the 1,800 mile desert railway pays a profit?

It must not be overlooked that fourteen years ago, Russia included the construction of this line, in the projected continuation of her own Central Asian schemes. If the construction by China of a little railway in Manchuria is prohibited by Russia on the grounds of menacing her strategic position on the Amur, is it likely that she would willingly consent to the construction of a line into far distant Sinkiang where her influence is now supreme and her interests are far greater and of more vital importance? If the projected Chinchow-Aigun Railway is considered prejudicial to Russia's strategic position in that section, because of the possibility of its falling into Japanese hands in case of war, would not China's projected line to Ili and Kashgar, be a far greater menace if they fell into the hands of another foe at some critical time in the future, thus exposing Russia's Central Asian strongholds to a flank attack.

China would probably be permitted to finance and construct a railway into Sinkiang, but only under some well defined agreement with Russia. The same applies to any Chinese line through Tibet where British influence must always remain supreme while India holds the key to the Empire.

Apart from the prohibitory clause of the Tibetan Convention, the construction of any Chinese railway through Tibet terminating at Kashgar would be viewed with the deepest concern by the British Government, and if China should at any time in the future secure the funds from other interests and persist in applying them for its construction, Russia's precedent in Manchuria would assuredly be followed by Britain, to safeguard her position in India. It is hardly probable that such a situation would ever arise, on the other hand a turn of world politics may again see Russia extending her Central Asian outposts and again knocking at the gates of India, while her financial allies and backers are making her path easier by financing a Chinese line through Tibet which ultimately might be connected at Kashgar with Russia's Central Asian system, facilitating her approach to the Himalayan passes which now act as a formidable natural barrier to any northern foe.

Russia's strategic railways throughout Asia exhibit an absolute continuity of policy, for though construction may be suspended from time to time, the main scheme is always kept in view and followed out slowly but surely. A glance at the map will conclusively prove that these lines which now appear to be enmeshing China's border dependencies are also gradually reaching out with a fixity of purpose that will once more place Russia in a position to assume an aggressive policy towards India, from the point where she left off thirty years ago. The present British Government may have compounded its differences with Russia and reached some understanding concerning future movements in central Asia, but it is only necessary to study the map and follow Russia's enormous expenditures in what she now terms commercial railways to be convinced that her schemes can only have one ultimate purpose.

It is clearly apparent then that apart from the financial and engineering features of the Lanchowfu-Ili-Kashgar sections of China's proposed Central trunk line, there are weighty political difficulties involved, which almost preclude any possibility of its becoming a reality in the near future. This applies with even more force to Dr. Sun's project of Tibetan trunk lines terminating at Kashgar.

Having followed the proposed central trunk line to its logical far westward terminus we may retrace our steps to the starting point at Kaifengfu, and turning eastward study the vagaries of the project in its endeavor to find a way to a deep water outlet under China's exclusive jurisdiction, without clashing with those rights already surrendered to foreign or native provincial interests.

It has been previously demonstrated that the logical outlet of such a line is northeastwards, through Tsaichow to Yenchow uniting with the existing lines terminating at the port of Tsingtao. It has also been indicated that Germany is keenly observant to the advantage such a line would confer on Tsingtao, and has secured a promise from the Chinese Government that if foreign funds are required, Germany will have the first option

to supply them. With this route closed, there would appear to be no alternative other than a line to some deep water port on the Yangtze, and the logical point in this direction is Pukow. We find, however, that the project would almost parallel the rights surrendered to the Peking Syndicate, and capitalized by them in the organization of the Chinese Central Railways, Ltd., and as we will see later on, it also clashes with the plans of the provincial Anhui Railway Company. The trunk line, debarred from striking northwards without crossing the boundary of Shantung and entering Germany's sphere, and with all natural outlets closed, the Chinese Government determined to build due east from Kaifeng, skirting the southern Shantung boundary to Kweiteh, thence to Suchowfu, crossing the British Section of the Tientsin-Pukow line at this point, and southeast to Tsingkiangpu on the Grand Canal. The rights to this last section from Suchowfu to Tsingkiangpu had been ceded by the Central Government, and included in the plans of a local concern styled the Kiangsu Railway Company. Capital had been raised and a few miles of rails laid down out from Tsingkiangpu, when further progress was abandoned for lack of funds. The company's plans included the construction of a through line from this point along the Grand Canal to the port of Yanchow on the Yangtze opposite Chinkiang. The Central Government decided to appropriate the Suchowfu-Tsingkiangpu section of the Kiangsu Railway Company for the central trunk line, and from the latter point follow the Yen River northwards to Haichow, and there develop a harbor behind a small island off Yuchow Promontory. This project was then known as the Kaifeng Haichow line and two years ago tentative overtures were made to foreign financial syndicates to advance funds for its construction, but serious negotiations were never opened. The Vice-President of the then Board of Communications H.E. Shen Yun-pei, claimed Haichow as his ancestral home, where he controlled large interests in the adjacent districts. This may help explain the government's enthusiasm at that time, and throw a side light on their selection of this unprotected and little known port as the terminus of the projected central trunk line. A deep water port at Haichow under the lee of the small islet off the Yuchow point, might be built up in time, but only at an enormous expenditure, and it is doubtful then whether it would ever be popular with shipping interests. Dr. Sun's scheme contemplates the selection of some point on the Yangtze as the terminal of the central trunk system, but the exact point has not yet been officially disclosed. Pukow is generally admitted to be the most favored location, though Yangkow opposite to Chinkiang, the terminus of the projected Kiangsu Railway company's line, has the same water advantage. If Pukow should be selected, the British section of the Tientsin-Pukow line would become the most important section of the through system.

As an indication of the working of the Chinese mind, we reproduce an item appearing in the *North-China Daily News* of 16th September, or about the time that Dr. Sun departed from Peking to commence active work on his great scheme. "Hsueh-chou-Tungchow Railway.—The Directors of the Kiangsu Railway Company have obtained a loan of Tls. 45,000,000 from a French Syndicate, reports the *Shenpao* of yesterday. The loan is contracted by the Company as a private concern, and is to be

repaid also by the Company privately. The money is to be devoted to the construction of the railway between Hsueh-chou and Tungchow, of which Mr. Li Jen-tsai has been appointed Manager. The work of construction will begin two months after receipt of the money."

This probably has no connection with Dr. Sun's scheme, and the negotiations with a French syndicate may have no foundation in fact, and they assuredly lack Dr. Sun's sanction. The item nevertheless provides food for serious thought. If true, it is conclusive evidence that the provincial railway company does not intend to have its line set aside, or incorporated in any general scheme under control of the Central authorities, and to forestall Dr. Sun, it has turned to the one financial group disposed to consider an overture for a loan. British railways in China, are practically a monopoly of the British & Chinese Corporation, and their interest centers in having the trunk line terminate at Pukow, utilizing their section of the Tientsin-Pukow Railway as the outlet. A Belgian syndicate financed the Kaifeng-Honan (Pienlo) section of the trunk line, and holds the option on the extension to Sianfu. It does not appear that they have any option to finance the extension eastwards towards Suchowfu. It is therefore significant that the Kiangsu Company would hasten to negotiate with a French (Belgian) syndicate to finance the line from Suchowfu to Tungchow at the mouth of the Yangtze, thus permitting the Franco-Belgo-Russo allied interests to dominate the future control of the entire system. The rights of the Kiangsu Railway Company within the provincial limits of Kiangsu, entitle them to construct a line 50 miles beyond Suchowfu towards Kaifeng. This leaves a stretch of 120 miles from the Kiangsu provincial border to Kaifeng in Honan, which at present come within the "investigations" of the Honan authorities. It is apparent then that if a French syndicate concludes a loan at this juncture with the Kiangsu Railway Co., it would firmly establish their control over the entire central trunk line from the Yangtze to Sianfu, and beyond to Lanchow, here Russian political influence would step in, and the line to Ili and Kashgar come under her influence, thus establishing a through Central Asian line under control of the three allies. The immense political bearing this control might exercise in Far Eastern affairs can be better appreciated by a study of the map. At Sianfu, the same combination has acquired the right to finance that section of the Tung-pu Railway through Shansi to Taiyuanfu, and the future project connecting Sianfu with Chengtu, also comes within their influence. Here if French plans carry through, a connection will be made in the future with their Yunnan railway. All of which tends to illuminate the absolute continuity of policy characterizing Russian railway schemes in Central Asia. The above exposition of conditions surrounding the construction of the central trunk line, make clear a few of the delicate points to be solved before the conflicting elements can be merged into a harmonious whole, and if foreign funds must be secured for the scheme, it will tax the diplomatic skill of Dr. Sun and his advisers to avoid surrendering its control to the Franco-Russo-Belgo-group.

(To be continued)

CHINA AND HER DEPENDENCIES

When the Powers decide to recognise the Republican Government of China will that Government have ceased to enjoy proprietary rights over its immense dependencies, Mongolia, Manchuria, and Tibet? That is the question that is now being asked by everyone who takes an interest in Far Eastern affairs, and the answers vary in accordance with the prejudices, hopes and preconceptions of those who are daring enough to express their views. The importance of the matter can be partially gauged by a consideration of the extent of the territory involved.

The eighteen provinces of China Proper contain an area of about 1,500,000 square miles. The area of the dependencies is over 2,500,000 square miles. Should these dependencies elude China's slackening grasp, out of every 400 square miles of the former Empire 250 will have been lost.

Before the revolution Manchuria was acknowledged by treaty to be an integral part of the Chinese Empire, though the special interests of Russia in the North and Japan in the South were tacitly recognized. Mongolia was admittedly a portion of the Imperial dominions and negotiations in connection with this region had always been conducted with

the Peking Government. In other words the sovereignty of China over Mongolia was acknowledged, and especially by the Power principally interested—Russia. The position in Tibet was a little different. Here the Chinese Government exercised suzerainty, but not sovereignty. An endeavour to assert sovereignty had been made, however, with some success. The Dalai Lama had been driven to India and China had seized the machinery of government.

With the success of the Republican arms in China proper an entirely new situation was created. In Manchuria outwardly things remained much the

same, but Mongolia declared its independence of China. It is claimed with apparent justification, that Russia has, at least informally, countenanced this action on the part of the former dependency. The Hutukhtu, the "Living Buddha," has become the ruler of the new state. Tibet was also encouraged to endeavour to regain her independence, and she succeeded in expelling most of the Chinese troops who had held the country in subjection since the flight of the Dalai Lama.

That there was very real danger of her dependencies being lost to her was recognised by the Peking Government, but internal chaos and lack of funds prevented any systematic measures being taken to preserve her ancient rights. However, endeavours were made by moral suasion to induce Mongolia to come into the Republican fold. Mongolia refused to listen to the voice of the charmer, and began to arm to resist any attempt on the part of the Republic to effect by force a result that could not be achieved by persuasion. Munitions, training and advice are said to have been lent to the new state by Russia, and it is also declared that a brisk trade in arms has been carried on by enterprising Japanese from Manchuria. At the present moment hostilities are proceeding in Mongolia, though necessarily with two unrecognised governments in conflict no formal declaration of war has been made.

The expulsion of the Chinese troops from Tibet, encouraged the Dalai Lama to start on his return to Lhasa. But a popular agitation in Szechuan for the despatch of an expeditionary force to reassert Chinese authority in Tibet had resulted in a force, led by the Tutuh in person, starting for Lhasa. These Chinese troops have had several encounters with the Tibetans near the frontier, but reports are conflicting in regard to the measure of success achieved. The despatch of this force however, was sufficient to make the Dalai Lama doubtful and he paused on the journey to his capital to give the matter further thought.

In the meantime an event had taken place which is generally considered to have had an important bearing on the future of China's dependencies. Prince Katsura and Baron Goto journeyed to St. Petersburg and there had important discussions with the Russian Prime Minister and the Minister for Foreign Affairs. These conversations were curtailed by the death of the late Emperor of Japan, but it is believed that an agreement was arrived at in regard to the interests of Russia and Japan in the northern dependencies of China that was highly satisfactory to both. There seems, also, to be some ground for the belief that Great Britain and France, as allies of Japan and Russia, were kept fully informed of what was transpiring, and some surmise that they gave their

assent to the understanding that was eventually reached.

A diplomatic bombshell was exploded at the feet of the Peking Government in the middle of August when the British Minister presented a memorandum in which Great Britain demanded a return to the *status quo* in Tibet as established by the Anglo-Chinese Convention of 1906. The British interpretation of that Convention was that it gave no power to China to administer the internal affairs of Tibet, nor to despatch a military expedition thither. China was recommended to confine her activities within these bounds and to prepare to negotiate a new convention with Great Britain, otherwise the Republican Government would not be recognised. China is said to have replied stating that, as Tibet is Chinese territory, she considers it her duty to preserve the peace of the country, and it was with this in view that she had despatched a military expedition. She was agreeable to revert to the *status quo* and to withdraw the Szechuan expedition.

This is a hastily executed sketch of the situation as it existed early in September. The action of Great Britain is generally interpreted to mean that she has associated herself with Russia and Japan in the policy of weakening China's hold on her dependencies. If Russian influence becomes paramount in Mongolia and Turkestan, as seems inevitable, the interests of India would demand the establishment of Tibet as a buffer state. British policy in the Far East is governed by the necessities of India and it is thought that the British Government concluded that India's interest would be best served by establishing another Afghanistan between her and Russia. The alliance with Japan and the strong friendship with Russia, which are invaluable to Great Britain in view of possible European complications, prevented her, even if she so desired, from raising any objection to the understanding with regard to China's northern dependencies. Policy dictating her abstention from an appearance in the role of defender of that ancient shibboleth "the integrity of China," she was driven to join forces with those who see their opportunity in China's weakness. This represents the view taken by the average unprejudiced observer, Chinese or foreign. He believes that Russia, anxious to secure freedom to build the long talked of Kiaktha-Urga-Kalgan railway, encouraged the Mongols to proclaim their independence with the ultimate object of establishing herself as the paramount power in Mongolia. Japan was induced to regard this scheme without disapproval by the admission by Russia that Inner Mongolia fell within her sphere of influence. Great Britain, being unable to protest in view of her alliance and friendship, took the step that seemed most likely to protect the interests of India and announced herself

as the supporter of Tibet's demand for virtual independence.

Assuming that this is a fairly correct interpretation of the motives that have been animating Russia, Japan and Great Britain, the question arises is anything likely to be done by any other Power to prevent the logical outcome of the policy of these three nations? France, who is closely watching Yunnan's tentative movements towards independence with interested eyes, is not likely to raise any protest. The only other Powers that need be considered are the United States and Germany. The United States has always been a sincere advocate of the Open Door in China and of the preservation of the country's territorial integrity. The late Mr. John Hay, when Secretary of State, blocked the establishment of spheres of influence in China and the present Secretary, Mr. Philander C. Knox, recently secured the adherence of Germany to a re-affirmation of the policy of the open door. But, can the United States afford to rebuke Great Britain and Russia for their policy in regard to Tibet and Mongolia? The world has not forgotten the circumstances that surrounded the acquirement by the United States of the Panama Canal Zone. Negotiations had been carried on with the Republic of Columbia for the acquirement of the strip of territory required without success. Suddenly, at a singularly opportune moment as far as the United States was concerned, the Columbian province of Panama declared its independence. The Government of the United States promptly recognised the Republic of Panama, took it under its protection and obtained from it the cession of the Canal Zone. With these facts on record it is difficult to see with what justification the United States could object to the Russian procedure in regard to Mongolia or to Great Britain's action in supporting Tibet. Germany it may be assumed is not likely to constitute herself the champion of China. Unless, therefore China can herself by diplomatic means, military methods being obviously out of the question, safeguard her rights there seems little possibility that she will retain possession of her dependencies.

With politics the FAR EASTERN REVIEW does not concern itself except in so far as they concern finance, industry and commerce, but the preservation of the open door is a matter of the very first importance to the interests this paper serves, and it is therefore legitimately anxious to see that no political changes vitiate the principle of equal opportunity to all. If China cannot prevent the loss of her outlying territories there should be a clear and unequivocal announcement on the part of the Powers who propose to take upon themselves China's responsibilities in the dependencies that the door shall be kept wide open and hooked back so that the traders of all nations may have free access and equal opportunity.

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THE CHINA LOAN SITUATION

An interesting situation was reached on August 30th last in connection with China's efforts to overcome her financial distress, when the final agreement for a loan of £10,000,000 was signed in London by the Chinese Minister. This loan has been in course of negotiation for some time past, and in view of the attitude of the six great Powers in committing themselves to support none but the banks connected with the Sextuple Group of bankers, every effort was made to preserve secrecy in order to obviate obstruction. By the time of the signature of the final agreement the Chinese Government was assured that the loan would actually materialise, and there was considerable jubilation (which however proved short-lived) in official circles in Peking owing to the belief that at last the Government would be able to dispense with the services of the Sextuple Group and find a free field elsewhere in which to seek for the financial aid so sadly needed.

To understand and appreciate the motives for such a desire it is necessary to trace briefly the efforts of the Government to secure finances from the time when the International Group, then composed of banks representing Great Britain, America, Germany and France, broke off negotiations owing to the duplicity practised by the Government in floating what is known as the Belgian loan, which far reaching and misguided action was fully described in the April issue of the FAR EASTERN REVIEW. When negotiations were resumed after that escapade the Chinese Government expressed its willingness to discontinue negotiations with the Belgian Group, which had advanced £1,000,000, and to negotiate with the International Group for a large loan, preliminary advances to be made in the meantime to enable the Government to pay its soldiers and provide for essential administrative disbursements. On May 17, therefore an agreement was come to by the Group with the then Minister of Finance, Mr. Hsiung Hsi-ling for an advance of Tls. 3,000,000, half to be used in Shanghai and Nanking and half in Peking, the amount to be treated in the agreement with a sum of Tls. 2,000,000 advanced by the bankers on February 28, and Tls. 1,100,000 advanced early in March before the rupture of negotiations in the latter part of that month. The Agreement covering these preliminary advances comprised a letter from the bankers and certain regulations mutually agreed upon by the bankers and the then Minister of Finance. The advances were to be delivered against the issue of Treasury bills bearing the same date, and secured by the revenue of the salt gabelle, and were to be redeemable from the proposed reorganization loan. The expenditure of the funds comprised in these advances, (this was the first point upon which the ultimate deadlock hinged) was to be

under the inspection of a foreign and a Chinese auditor, and therefrom arose the wild agitation against the introduction of foreign "supervision" of China's finances. It is necessary to explain this because of the stress laid by the Chinese upon the term "supervision." As a fact the alleged supervision amounted to no more than the appointment of a foreign and a Chinese auditor, and a staff to work with them apart from the Minister of Finance, the duty of the auditors being to sign all orders on the bankers for funds. In addition, the Ministry of Finance engaged to furnish the bankers with specific statements of the objects upon which funds obtained from the advances account were to be expended, the statement to first have the approval of the National Council and be published in the Official Gazette. In so far as the disbandment of troops was concerned the Bankers also made stipulations which were vigorously contested. They had evidence that various provinces claimed troops far in excess of the number actually in service as soldiers, and they endeavoured to arrange to avoid fraud, that the disbandment should be carried out by foreign and high Chinese military officers. This added fuel to the fire of opposition caused by the suggestion of a foreign auditor, and the local Commissioner of Customs and a Chinese official were ultimately agreed to as sufficient to satisfy the needs of the moment. But these stipulations for "supervision" placed a weapon in the hands of the opponents of President Yuan Shih-kai of which they took immediate advantage and wielded to such good purpose that the Peking Government was compelled to listen to the clamors coming from the provinces against foreign loans, and do its utmost to overcome the reluctance of the bankers to lend money without "supervision." The Government found the Bankers unable to reduce their terms, and the difficulties that confronted them from prolonged impecuniosity persuaded them to accept the terms, at least for the preliminary advances. The pleadings of the Government induced the Group to modify the demand as to the supervision of the disbandment by military officers, but the bankers would not forego the appointment of auditors. The scruples of the officials in that regard were therefore suppressed and an auditing branch having been established further preliminary advances were made on June 12 and June 18, a sum of Tls. 3,000,000 being paid over in each case, making a total of Tls. 12,100,000 in all.

Meantime efforts were being made to obtain a large loan for reorganization purposes from the Bankers upon modified terms, but the bankers plainly intimated that whilst they were prepared to lend money they could not see their way to do so unless upon the same terms already offered,—auditing of expenditure and reform the salt gabelle. On June 15 the Premier, Mr. Tang Shao-yi left the

Capital and abandoned his portfolio, and about this period the Group of four was enlarged by the entrance of banks representing Russia and Japan, the entree being the result of the bankers' conference held in Paris. On June 24 the bankers waited upon the Premier, Mr. Liu Cheng-hsiang and notified him that the Group had been extended and that the only conditions upon which they would be able to lend the large amount required by China was upon the latter undertaking radically to reform the Salt Gabelle, (the revenue of which was offered by the Government as security) and place it under European management as was the case with the Maritime Customs. The Government objected and an interruption occurred in the negotiations which seemed to suggest to the Foreign Ministers that the situation might be relieved by a visit from them to the Premier, and consequently they waited upon Mr. Liu and the Minister of Finance, Mr. Hsiung. They made it plain that they had been instructed that their respective Governments would sanction no loan except under the terms which the Sextuple Group had already made known, and gave reasons why China could not expect anything else. The interview terminated after Mr. Hsiung had presented his ideas as to the reform of the Salt Gabelle, quoted below, and after he had again pronounced the terms to be impossible. Though agitators continued to endeavour to raise sufficient money for Governmental purpose by a Patriotic loan, the scheme ultimately failed. The Government continued frequently to express its need of money, and repeated the demand for £10,000,000 immediately and advances of Tls. 6,000,000 per month until October, and at that period another £10,000,000 to absorb the previous advances, again proffering the revenue of the unsupervised Salt Gabelle as security. The Group declined, adhering to their previously stated terms. The deadlock thus created lasted some time, when the Minister of Finance sent an ultimatum to the Group in which he stated that he had waited for a reply to the proposition mentioned above and had not received it, and that if the Group would not lend money the Government would feel itself free to go elsewhere for the funds it needed. The reply of the Group was, naturally, that they were quite willing to lend money to China but only upon the terms previously submitted, and this evoked a further declaration from the Minister of Finance that they were impossible. He, however, expressed the hope that another conference would be held to see if a basis for agreement could not be reached, but at the same time reserved the right to go elsewhere in an effort to raise the loans required.

The Chinese agitators naturally enough used the argument to further their own political ends, that the Group was refusing to lend money upon reasonable

terms, and by their agitation embarrassed the President to such an extent that at one time it looked as if he could no longer retain his position much less hold the country together. However, the political parties defeated their own object and finding the Patriotic Loan a fiasco withdrew their oppositions after a time and subsided. The Government meantime had been listening to the subtle declarations and seductive overtures of several loan negotiators and had given the provinces permission to borrow for themselves. As a result of the latter there was an unavailing scramble for money. Those who have previously talked in millions could not, when put to the point, raise thousands nor even hundreds, and quickly it was found that grave difficulties really stood in the way of obtaining money on the foreign markets. The Government learned for the first time perhaps that the foreign money market was not the easy and obliging medium that they had supposed, and that instead of the financiers of the world being ready to tumble over one another's heels to hand out millions to China they were positively reluctant to part with even hundreds of thousands or, for that matter anything materially helpful, unless upon the guarantees of their respective governments. The frame of mind which the bankers and the various governments had long ago reached, was that the time had come when a period must be put to indiscriminate lending to China upon intangible security, or upon security which could not be controlled by the lenders in the event of an internal break down or repudiation by the Chinese Government. Particularly was this view accentuated by the difficulty experienced by the President in forming a stable government. The foreign governments could not and would not back a mere man. Though the President may be the strongest man politically, as also from a point of view of statesmanship, in the country, he could not be backed as an individual. Death or deposition would put quite a different force in power, and the new comers might very easily decline to shoulder any millions borrowed by their predecessor. It is thought, indeed, that a future government would be well pleased to wipe out the great accumulating debt by repudiation, and though such an act would at once place China in the melting pot, this the lenders of to-day are not going to risk. On the question of the reform of the Salt Gabelle, however, it must be said and it is interesting to point out, that the parties in the negotiations have never come upon a common ground of discussion. The Chinese had never asked for details of the Bankers' proposals for reform, and the Bankers had never offered them but in very general terms. On the other hand all that the Chinese had offered were included in the memorandum quoted hereunder, which seems to satisfy

their claim to accept "reform" of the Gabelle.

The financial needs of the Government were increasing with the effluxion of time, and inspired with the hope of raising a handsome amount negotiations were carried on with a loan promoter who was backed by a new and independent group of bankers, connected with which were the names of prominent London Banks. A preliminary agreement was signed in July, and a final one on August 30, for a sum of £10,000,000, and the terms given out were that the loan was for forty years at 95 and 5% interest, and secured upon the unmortgaged portion of the Salt Gabelle and land transfer taxes. As a fact the terms were later reported to be less modest, the Government accepting the loan from the promoters at 89, the promoter to issue it to the public at 95 and any profits secured above that figure to be divided with the Chinese Government. Great secrecy was maintained with regard to this loan negotiations for which were carried on unbeknown to the Group or the Legations, but news of it leaked out in the first week of September, and opposition at once began.

The result was that the Chinese Government was compelled to again realise that foreign money could not be easily acquired against the approval of the governments, and on September 16 the National Council was informed that the Government would be compelled to give up hope of raising an independent loan and would have to go back to the Group. That day a further advance of Tls. 3,000,000 was sought, but the Bankers were shy to a degree, though the amount would no doubt have been forthcoming upon a distinct declaration from the Government that it would suspend negotiations with all other sources and confine itself to the Group, accepting their terms with regard to security. It is more than of passing interest to notice how these preliminary advances are disposed of, and we are able to give below a detailed list of the expenditure of the amounts advanced between May 17 and June 18.

The following is the text of the memorandum regarding the Salt Gabelle which was handed to the Foreign Ministers by the Minister of Finance:

"Owing to smuggling and, corruption, the annual salt revenue of this country in the late Manchu Government was a little over 40,000,000 taels. The Government now propose to create a Government Monopoly in selling salt and will not permit the salt manufacturers and the merchants to come into touch, as they will certainly exercise corruption to the detriment of public revenue. The plan is this: that the Government will buy the salt directly from salt manufacturers at a reasonable price and then resell it to the salt merchants.

"But to carry out this scheme there will be two periods:

1st period: The Government will still allow these salt merchants who possess the certificates to continue their business, as they have vested interests; but as above stated it will buy from salt land all salt, resell it to salt merchants and put a tax on every 100 catties we sell.

2nd period: A year or two after the execution of the method mentioned in the 1st period, the Government shall dismiss all salt land-merchants in the interior and shall set up modern scientific factories in all the coastal provinces to manufacture salt bricks as is done in Holland now. By this method the monopoly of salt-selling territories shall be done away with and the Government will be the sole proprietor, and will receive tax on salt at the places of its production.

Now the total population of the Republic is about 420,000,000 and if each one consumes 13 catties a year, the total yearly consumption of salt will be about 5,460,000,000 catties.

"Now if we levy a tax of two dollars per 100 catties we should get a yearly revenue of \$109,200,000 which is equal to 78,600,000 Chingping Taels. This proposed rate is far less than that of the old rate of the Manchu Government which was $2\frac{1}{2}$ taels or about 3.50 per 100 catties. Thus we see that with a reduced rate of taxation which will lessen greatly the burden of our people and yet we can derive a yearly revenue of 78,600,000 taels and the excess over the old revenue is 38,600,000 taels per year.

"But in carrying out our plan mentioned in the second period a capital of 50,000,000 taels is necessary for buying salt which will at a rate of $\frac{1}{2}$ taels per 100 catties cost about 27,000,000 taels and the rest for the erection of salt warehouses and factories, engines, etc. Then of course the yearly revenue will be proportionately increased."

Following are the disbursements from the preliminary advances between May 17 and June 18:

FIRST INSTALMENT OF PROVISIONAL ADVANCES:
3,000,000 TAELES: MAY 17, 1912

	1912	taels
President's Bodyguard	May 22	90,000
Various divisions under the direct control of the Board of War	"	735,000
Right guard of the Wu Wei Regiment	"	60,000
Vanguard of the Wu Wei Regiment	"	20,000
Uniforms of the Imperial Bodyguard	"	20,000
Imperial Bodyguard	"	40,000
Salaries of the Military Advisory Office	"	10,000
Salaries & Expenditure of the Metropolitan Police	"	80,000
Military Court	"	3,500
Battalion of Infantry	"	20,000
Imperial Pension	"	19,049.864
Bannerman Allowances	"	339,861.6496
Redemption of Military Notes at Shanghai	"	1,500,000

SECOND INSTALMENT OF THE PROVISIONAL
ADVANCES: 3,000,000 TELS. JUNE, 12

	1912	taels
Board of War	May 13	702,584.72
Metropolitan Police	June 18	61,371.61
Infantry Police	" 18	40,000.
Bannerman Allowances	" 15	326,133.466
President's Bodyguard	" 14	150,000
Right Guard of Wu Wei Regiment	" 14	126,819.968
Vanguard of Wu Wei Regiment	" 14	86,644
Uniforms and expenditures of Imperial Bodyguard	" 15	120,000
Military Court	" 15	6,757.7
Allowances for Naval students abroad	July 4	18,770.53 K. F.
Remittance fee (of above)	" 5	260.22 "
Allowance for Naval students in Paris and Coal for Haichi	" 12	54,380.68 "
Expenditures of all crews	" 17	60,561.8 taels
Torpedoes, Hospitals, Cablegrams, Medical supplies etc., etc.	" 17	5,526 "
Allowance for Military students abroad	June 12	20,418.62 K. F.
Redemption of Military Notes at Shanghai	"	1,000,000. taels

THIRD INSTALMENT OF PROVISIONAL ADVANCES: 3,000,000 TAELES, JUNE 18 1912

	1912	taels
Imperial Pension	June 26	500,000
Disbandment of troops at Nanking		600,000
Disbandment of troops at Shanghai		200,000
Disbandment of troops at Yangchou		200,000
Disbandment of troops at Pukou		200,000
Military expenditure at Chefoo and Tengchou		417,417
Commutation of Rice for garrison at East and West Tombs	1912 June 28	100,000
General Staff Building	" 26	30,000
Bureau of Printing and Engraving	" 26	10,000
Parliament Building	" 26	10,000
Supreme Court Building	July 11	24,893.8
President's Bodyguard	Aug.	168,202.2
Bannerman Allowances	"	322,569.6

The combined sums enumerated above do not exactly equal the amount of the provisional advances, there being some small items not yet reported.

Since the foregoing was written it has been reported, apparently authoritatively, that China has categorically refused the terms offered by the Six Power Group. It is necessary to look back some months in order thoroughly to understand what this action means to China. The Four Power Group was originally formed to prevent intriguing on the part of individual nations to secure political advantages under the guise of commercial concessions. That policy was inherited by the Six Power Group. Instead of blind, cut-throat competition for financial and political advantages, which would inevitably result in the impairment of China's national integrity, it was decided to adopt a form of co-operation that would

tend to maintain China's rights while giving the financiers of the Powers most deeply interested in the country security for the rights already possessed, and the prospect of a share of the ultimate prosperity which the investment of further capital would induce. The Governments concerned recognised that this plan would conduce to the weal of China and the preservation of peace in the Far East, and they consequently extended their moral support to the Six Power Group.

In many quarters it was believed that if danger was to be apprehended to the new Republic, the quarters from which it was most likely to come were Russia and Japan. When, therefore, these two Powers joined the Group and identified themselves with the policy of collective rather than individual bargaining, it was felt that the strongest possible safeguard for China had been created. If these two Powers were animated by the predatory designs accredited to them their hands would be tied owing to their agreement to merge their interests with those of the others in the Group. The new Group, to which China is said to have irrevocably committed its destinies, is reported to include British, American, French and German interests. If this be so, then obviously Russia and Japan have been "frozen out" and are in consequence free to take whatever individual action may seem to them desirable. Thus the very danger against which the Six Power Group was designed to safeguard China, is again invited by China's own action.

The British and American Governments have announced that the new Group has no official support. It is difficult to see what other attitude they could adopt. Support was given to the Six Power Group because these two Governments, which are foremost in their advocacy of the Open Door and equal opportunity in China, considered that the policy for which the Group stood was most likely to preserve China's integrity and the peace of the Far East. In that the action of the new Group in putting a period to concerted action is subversive of this policy, it is impossible for the two Governments to afford it any countenance. In fact there seems to be a moral obligation upon them to prevent private financiers defeating a policy upon which their Governments have decided after long and careful consideration from a much broader viewpoint than is accessible to those whose main object is to secure returns from investments. Some difficulties will, therefore, be experienced in believing that China will finally commit herself to a course of action that will antagonise those who wish to befriend her and deepen the hostility of those from whom she believes herself to be in danger. At the moment of writing, however, the first moiety of the new loan has been successfully floated in London.

CHINA'S RAILWAY ENGINEERS

The continued expansion of China's railways and the growing necessity for a permanent staff of competent engineers directly in the service of the Government, should inspire the Board of Posts and Communications to take a lively interest in the engineers employed on the various lines now operating, or in course of construction, with the object of selecting the nucleus of a service which will before long become absolutely indispensable to the country. China should have her own engineers. She must depend upon railways for her development, and she must depend upon engineers for her railways. In the immediate future she will be launching upon construction schemes of great magnitude. Where that work will come under her own jurisdiction she should have at her command engineers who are qualified by experience in China as well as by practical effort elsewhere in the world. In the past the good engineer has come, has seen, has conquered, and has gone. Some of him have proved effulgently brilliant in the technicalities of the profession, lamentable failures in the gentle and delicate art of harmonising with the Chinese; some of him have been par excellent in comprehending the Celestial mind, deficient in the higher art of railways building, whilst others of him enjoyed the possession of both the quality of knowing how to work with the Chinese and the wisdom to be able to extract the best results from their own professional knowledge and training. Amongst the latter class is to be found the engineer and the man, and from that class China should begin to make a selection to provide for herself a staff of tried and trained servants who will make her interests their interests and their interests her interests. In short she should begin upon the creation of a properly organised railway service, adequate in every branch, competent to bring into realisation any of her projects, at once efficient from the engineering and general traffic points of view, and economic from the financial. There is scope for such a service, there will be absolute need of it in the not far distant future. On the numerous lines now operating or in course of construction are to be found men who have proved their worth in ability and character—men capable of obtaining the best results from the Chinese workmen and competent to strike the chord of harmony with the officials who must of necessity be associated with them in railway enterprises. In the past such men have been permitted to leave the country. The conditions of railway construction have been such that their services have not been required after the completion of the particular line upon which they have been engaged. They have worked a period of years; acquired not only a knowledge of the Chinese people and country, but in many cases have learned

something of the language, and what is of greater importance, have possessed themselves of a knowledge of the capacity of the Chinese contractor and laborer, the worth of his hire, costs of his work, and peculiarities of his character, that constitute a priceless asset in any engineer destined to control such costly undertakings as that of railway construction in this land of the fleeting and the fluctuating dollar. Such valuable knowledge all goes with the engineers who leave the country, and has to be acquired anew by their successors. Mostly, new work in China has been commenced with sectional engineers, if not engineers-in-chief, absolutely strangers to the country, and their ignorance of the multifarious methods utilised by the dishonest among the Chinese to prevent the dollar from purchasing all that it is supposed by the engineer to acquire, has resulted in incalculable financial loss to China. How great a sum has been frittered away through lack of this peculiar knowledge on the part of new engineers will never be known, and whilst there are other avenues by which large amounts trickle from the sight and hands of the accountant, the fact remains that vast sums could be saved by the continued employment of selected men who have graduated in the university of local experience, and who have gained stores of information of the tricks of that great game of graft which has made the name of China a byword in those places where regard is entertained for probity and honest dealing.

By judicious inquiry and selection from among the men who are "making good" on the lines now in course of construction, China could secure a sufficient number to establish a permanent service. The advantages of such a step are obvious. It would pay her a thousandfold in the future and would at the same time enable her to show appreciation of the services of those men who have "played the game" and given to their work the best that is in them. The inducements such a department would be able to offer would be a constant incentive to all engineers and others to do their best—and that is inspiration to constantly efficient work. From such China has the most to gain, but apart from selfish considerations on the part of China, it is not too certain that the engineers themselves have not some moral claim to consideration upon the expiry of their agreements. China will never appreciate, it is certain, what the railway engineer has given, and still gives, to her. Certainly he works for pay, and professes satisfaction with what his agreement stipulates, but there is a spirit which should enable a loftier view to be taken than that circumscribed and dictated by the cold requirements of the law. Engineers give years of their lives in distant, isolated parts

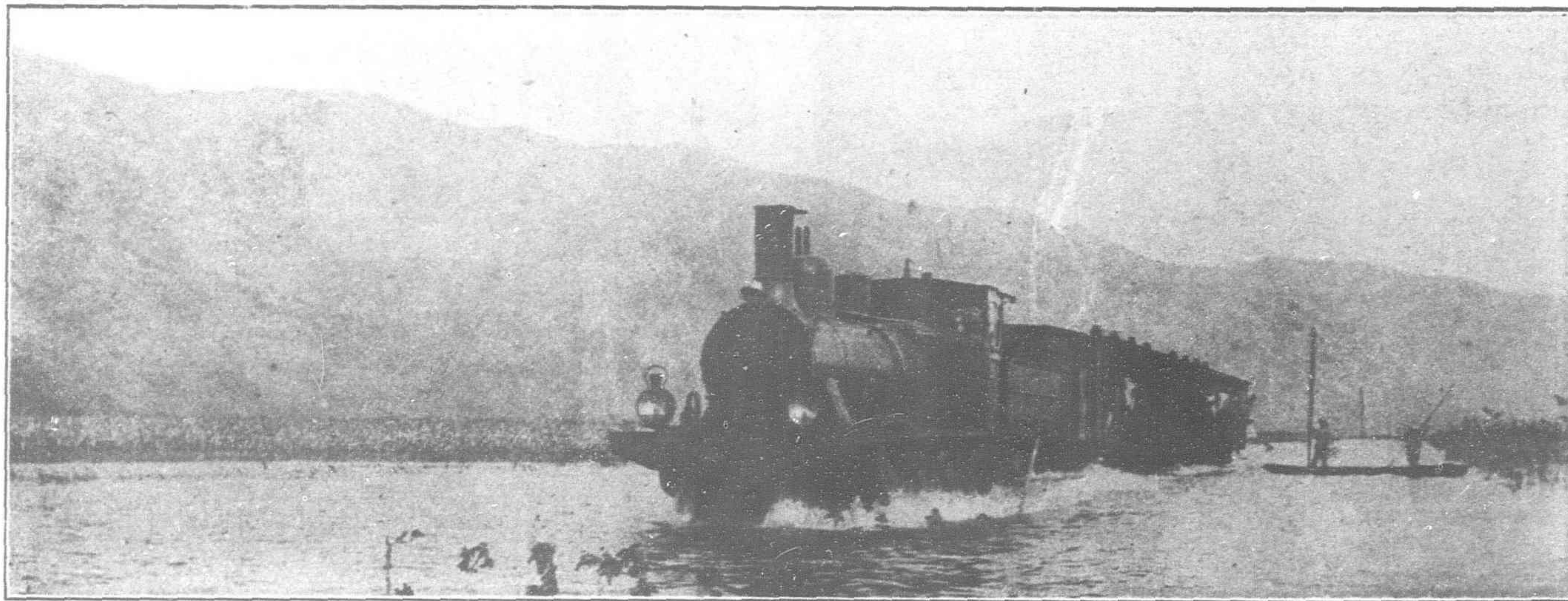
of the country, severed for months at a time from their kind, deprived of society, bereft of friends, inadequately provided with food, and possessed of but meagre connection with the outside world. They do this for pay of course, but every servant being worthy of his hire, and every genuinely loyal servant requiting his employer to the full for his hire, is it not fair for them to expect upon proof of competent service, that they may be retained in the land wherein they have gained so much knowledge that is peculiarly fitted for employment in no other country than China, and when so much of the work for which they are eminently suited is yet to be done? If there is an affirmative response to this question, then the establishment of at least an engineers' service in connection with China's railways is the easiest way to confer immeasurable benefit upon China, and appreciation upon those who loyally serve her.

Kirin-Changchun Railway.—The present indications are that the Kirin-Changchun Railway will be ready for service between Changchun and Kirin about the middle of October. At present the construction work has progressed as far east as two miles on the east side of Tumenling Pass. This means that the available length of the railway is 48 miles, leaving a span of 31 miles from Kirin yet to be taken in hand. Even in this section the roadbed has long been finished, and only part of bridging work remains to be completed. The light-rail line winding up and down Tumenling Pass is to be replaced eventually by a through rail service to be constructed by following the original plan of excavating a tunnel through the Pass. In view of the straitened circumstances in which the Peking government has found itself, this scheme of accelerating the connection of Kirin with Changchun by rail through the adoption of the light rail service over the Pass meets the hearty approbation of every one interested in this Railway directly or indirectly. The management is looking forward to the flattering returns which this line will render. The fertility of the soil along the Railway is proverbial. It is capable of yielding a fine crop of Beans, Wheat, &c., for three consecutive years, without receiving attention other than the necessary weeding, &c., in the form of manure, &c., Especially Beans produced in this belt contain a larger percentage of fatty substances and fetch better prices. These cereals together with Lumber, Tobacco Leaves, Medicinal Herbs, &c. will be exported by rail, and imports such as Coal, Cottons, Tea, Shumshu, Matches, Toilette articles, Provisions, &c., will be found in good quantities for the trains to take back from Changchun to Kirin. The freight receipts to be realized during the five busy traffic months from November to the following April are estimated roughly at S. Y660,000, from which the working expenses, including salaries, sundry disbursements, expenses for construction, maintenance of way, and operation, and interest on the Railway Loans, may be deducted to the estimated amount of S. Y466,000. This will leave for the net profit the balance of S. Y194,000, which sum may be set aside for the construction fund of the tunnel piercing through Tumenling.

At present, the construction fund is being remitted from Peking in a sum of S. Y40,000 or so per remittance. It is expected that the whole outlay invested in this line, before it is opened to traffic about the middle of October, will total only S. Y3,500,000 which gives the average of about S. Y43,000 per mile. This will be the lowest average cost in railway construction on record, although the temporary character of the light rail line over the pass must be taken into consideration.

CLOSING THE DOOR IN YUNNAN

THE OPERATION OF THE FRENCH YUNNAN RAILWAY



TRAIN CROSSING TA CHUANG PLAIN, DURING THE FLOODS OF LAST YEAR

The opening to traffic in April 1910 of the French railway from Laokay to Yunnanfu terminated one of the world's most interesting romances of railway building. These 287 miles of mountain meter gauge line are a magnificent tribute to French engineering skill, and as far as the construction work goes, will stand as a monument to the perseverance and ingenuity of man in one of his most disheartening combats against the combined forces of Nature.

Before the completion of the line, the optimistic element in Indo-China saw in Yunnan an Eldorado, and prophesied rich returns for the railway and great prosperity for the colony. With reasonable freight charges the line would draw to itself the trade of the entire province, and compete with Shanghai on one hand for the trade of Szechuan, and on the other with Rangoon for the trade of Western Yunnan and Eastern Tibet. There were others who maintained that the line would never pay unless it was extended northwards to Szechuan Province, in conformity with the original schemes of Governor Doumer, but whatever hopes the French might have had of securing a concession for this extension were abandoned when the Yunnan Viceroy through the Waiwupu, engaged the services of Mr. W. S. Dawley—an American Engineer—to survey a route from Yunnanfu to Suifu on the Yangtze. The scheme of extending the line northwards into Szechuan, and attracting the trade of West and South—west China to Haiphong, was given such publicity by the French Press, that the Chinese Government resolutely refused consent to the plan. If it became necessary to construct the line with foreign funds, France undoubtedly would have brought pressure to bear on China, to monopolize the loan, so to avoid friction, the Chinese decided to build the line as a Yunnan provincial enterprise. The services of the American engineer were secured, the survey has been completed, and construction only awaits settled conditions in the country.

Warned by her experience in Manchuria, China recognized the necessity of a railroad entirely within her own territory, one that would release her commerce from the transit and other taxes imposed by the French line, and permit the free movements of her troops. Two years ago, Mr. K. S. Low, one of China's best railway engineers, was ordered by the Railway Board, to survey a route from the West River Valley into Yunnan. This line, after construction, would make China independent of the French railway and checkmate the scheme of building up the port of Haiphong

with the commerce of China at the expense of Canton. But pending the construction of these lines, the French railway has a monopoly of carrying the import and export trade of Yunnan, or at least of those districts within the influence of the line.

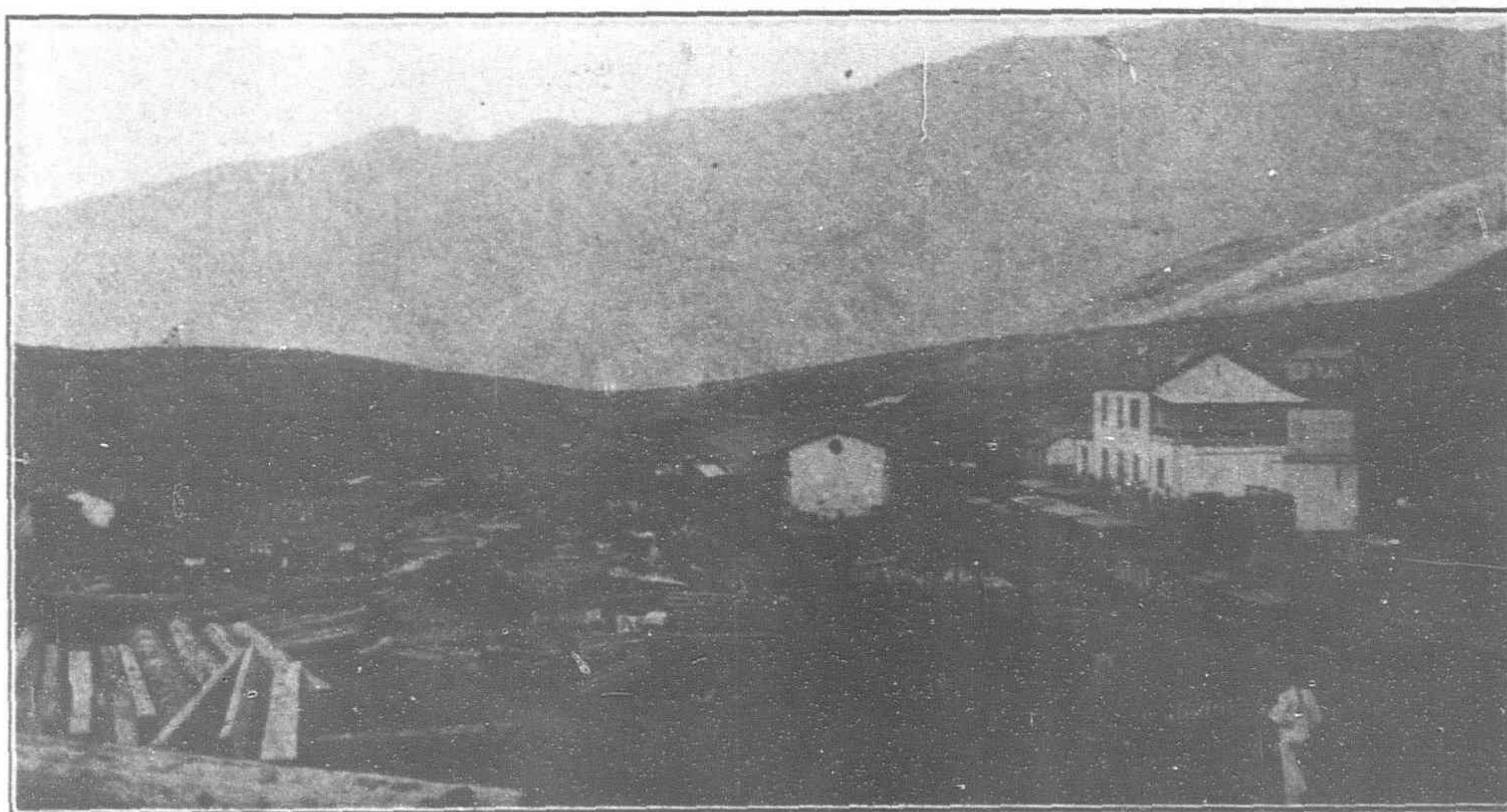
With such a bright prospect before them, and with everything their own way, it would seem that the French railway company would impose such tariffs, as would facilitate the rapid development of the province and create traffic for the railway. We find however that owing to the alleged high cost of construction, washouts, landslides and interruptions to the service, that the financial returns have been most disappointing. Instead of facing the situation in a manner calculated to inspire confidence and attract capital to the province, and encourage the expansion of trade, the railway authorities have adopted the policy of raising the freight rates to all the traffic will stand, and in addition, have devised a system of charges and taxation that for intricacy and mystery rival the old system of Chinese Hong milking. As a natural consequence traders are again taking to the older and cheaper river and caravan routes.

American Consular reports state that goods are still imported into Yunnan, Kweichow, and west China through Burma, thence by pack train to Bhamo and on to Tengyueh, and then

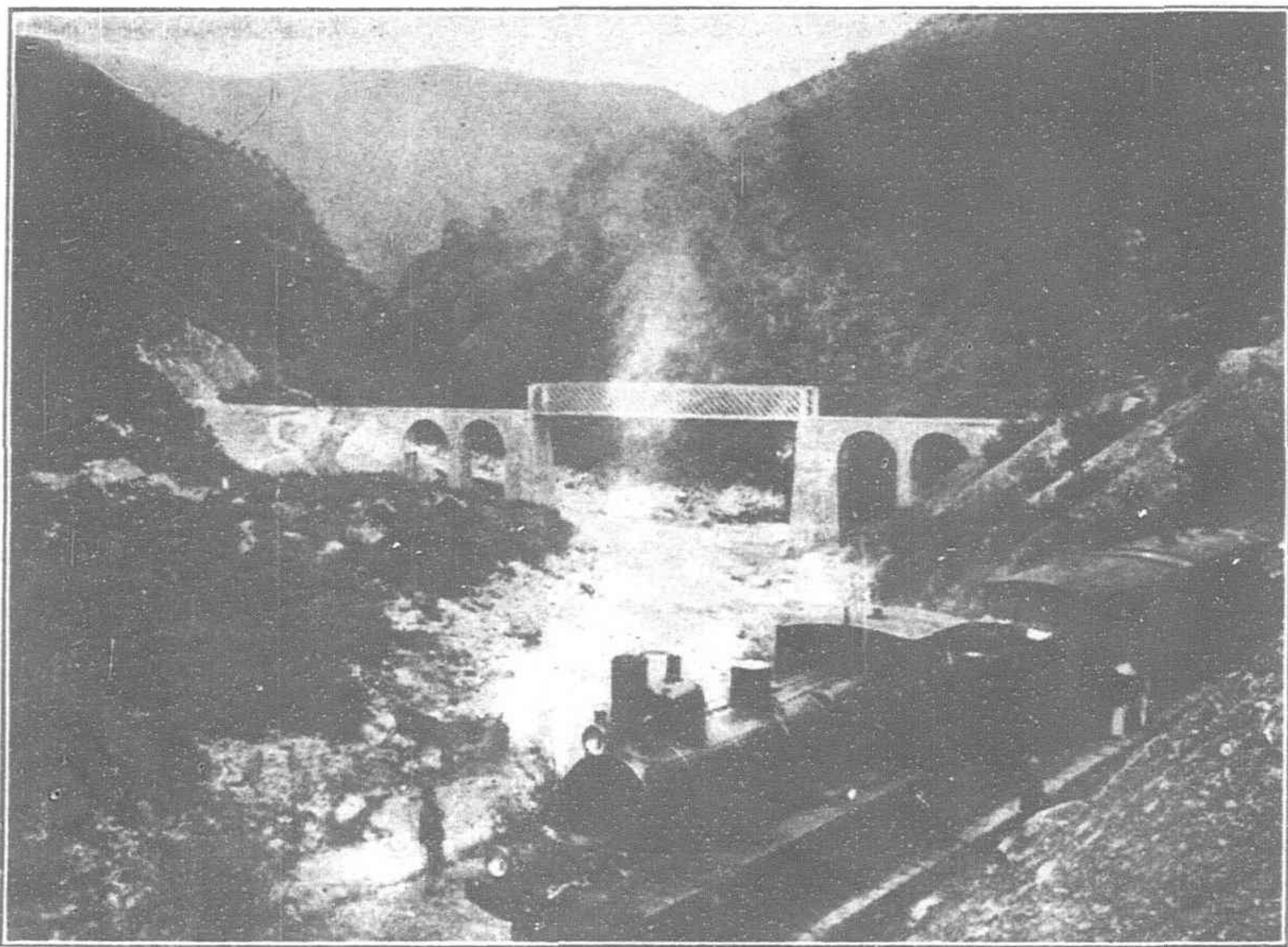
to Batang about 400 miles north, or to Talifu, and even to Yunnanfu where the goods are distributed all over that part of the country, as they have been since the beginning of the trade. These costly means and tedious routes are used in spite of what would seem to be the manifest advantage of the rail route to Yunnanfu or to intermediate points and thence by the natural caravan routes to various points in the Province and west China.

Another report says that the only serious drawback to the development of this interior trade along new lines is the fact that the French colony charges 20 per cent of its full import duty on goods entering Indo-China as a transit duty across Indo-China into Yunnan and Kwangsi Provinces. This transit charge is large enough to overcome the advantage of rail haul on foreign goods going into west China, and in spite of the railway's facilities, the trade returns from Customs stations like Tengyueh in West China, show substantially the same trade in goods imported by mule back from India that has been heretofore and before the railway's service to Yunnan and Szechwan was possible. Such goods have actually been delivered in Yunnanfu itself after 32 days transportation on mule back in direct competition with railway-borne goods.

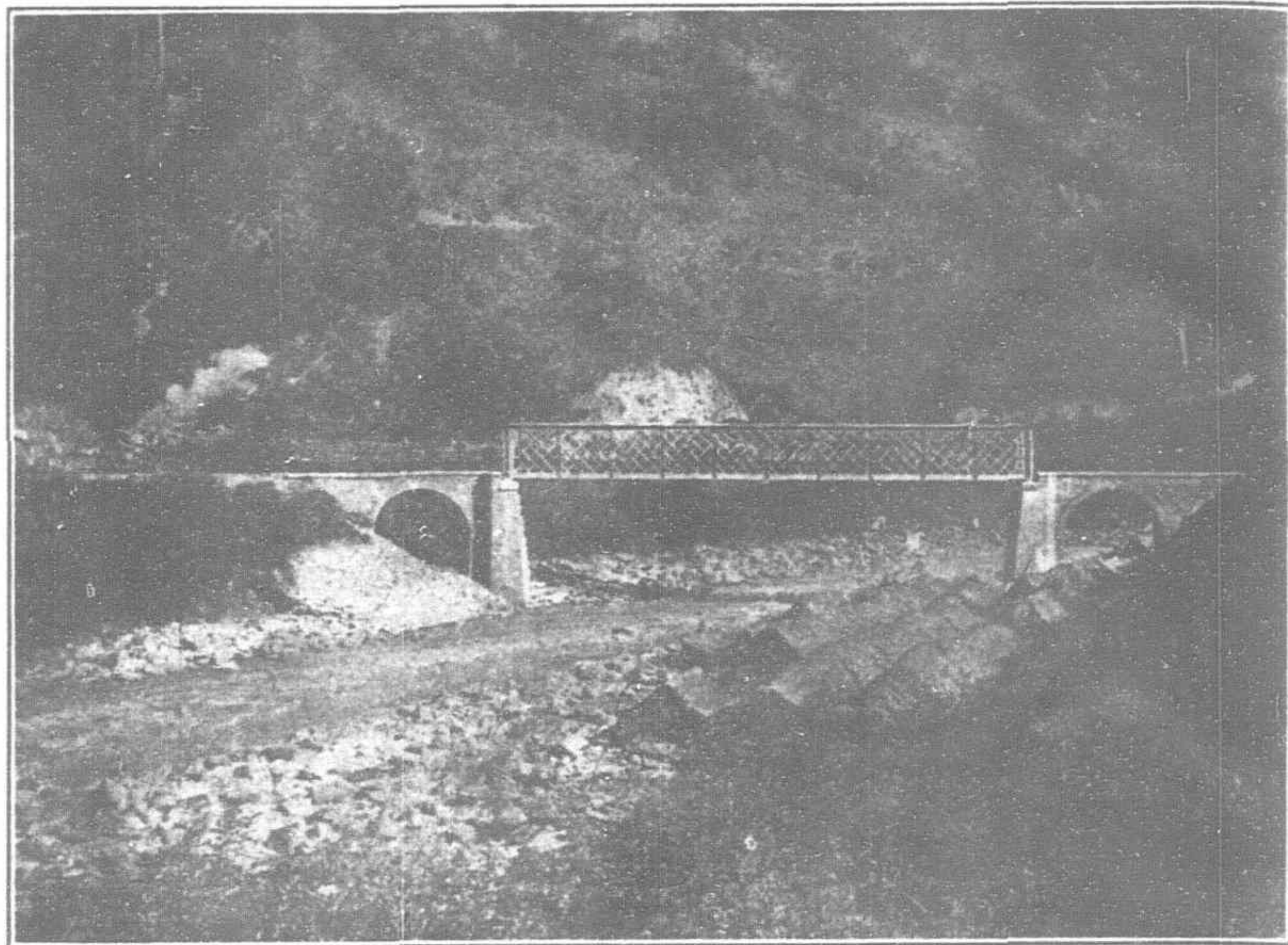
The American Consul-General at Hongkong (George E. Anderson) in one of his recent



PE CHI-CHAI, THE STATION FOR MENG TZE



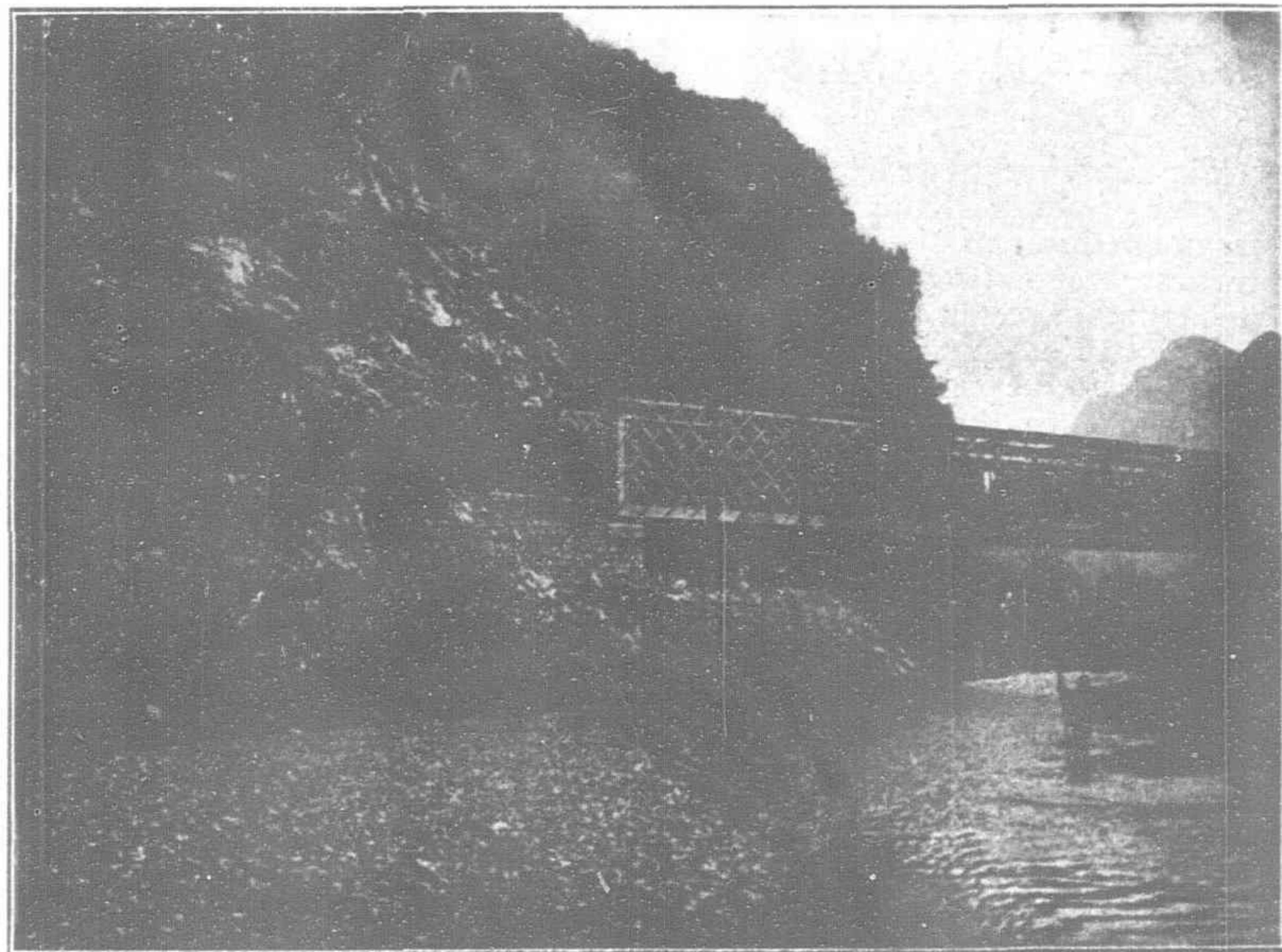
A SECTION BELOW LOU KOU CHAI



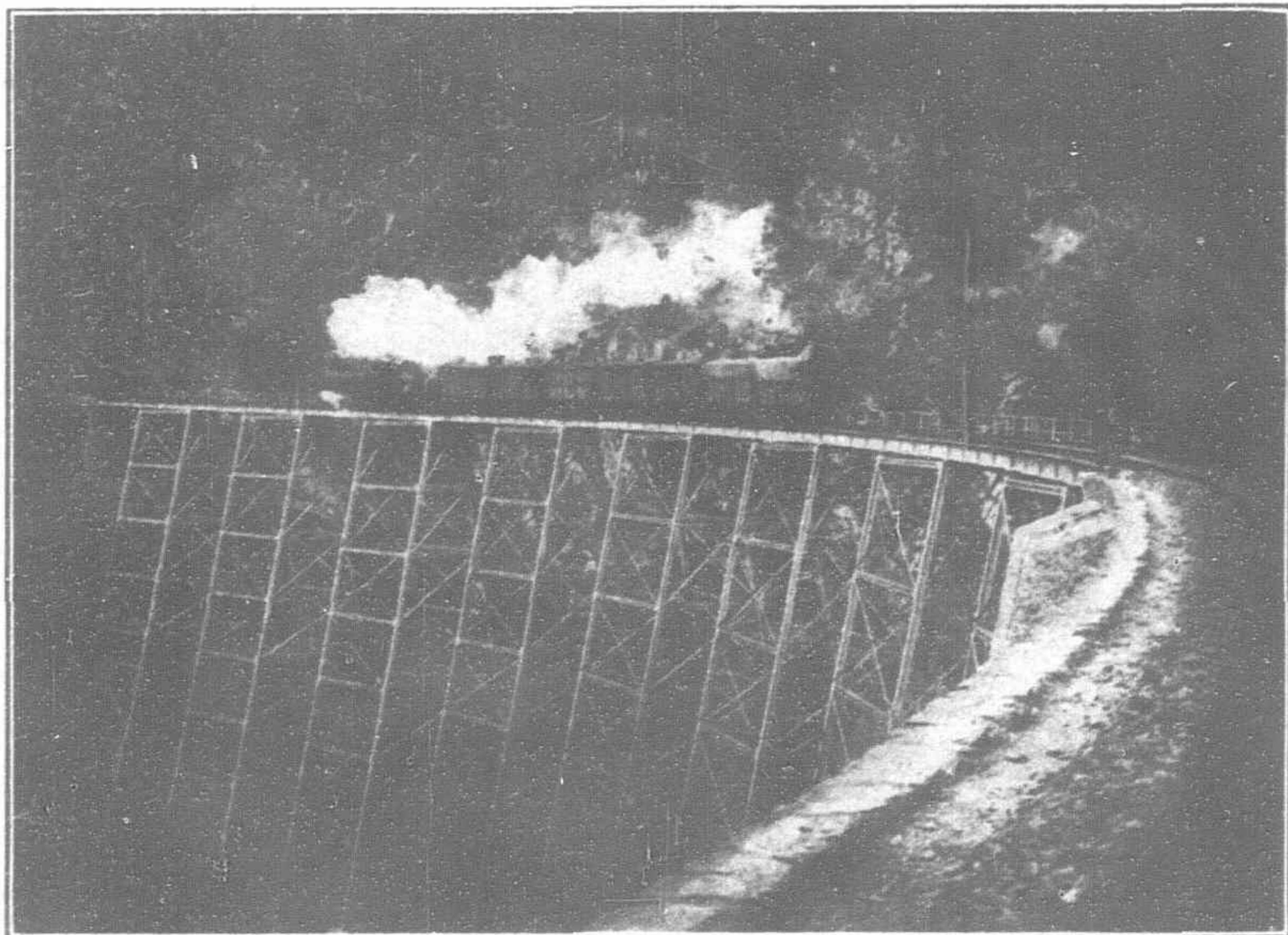
A BRIDGE ACROSS THE PALO-TAH-HO



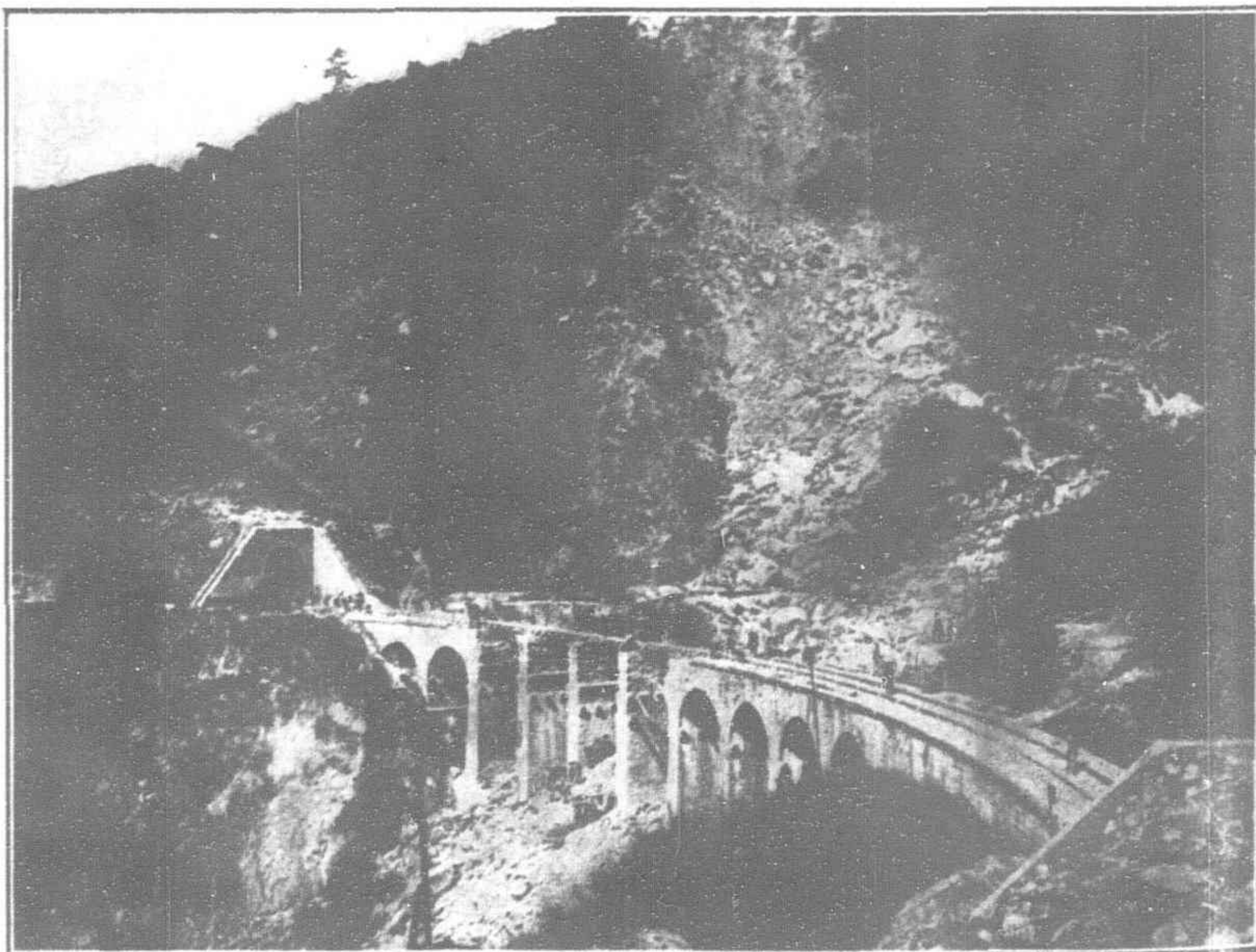
REMAINS OF A BRIDGE, SWEEPED AWAY BY A FLOOD



A BRIDGE ACROSS THE NAMTI

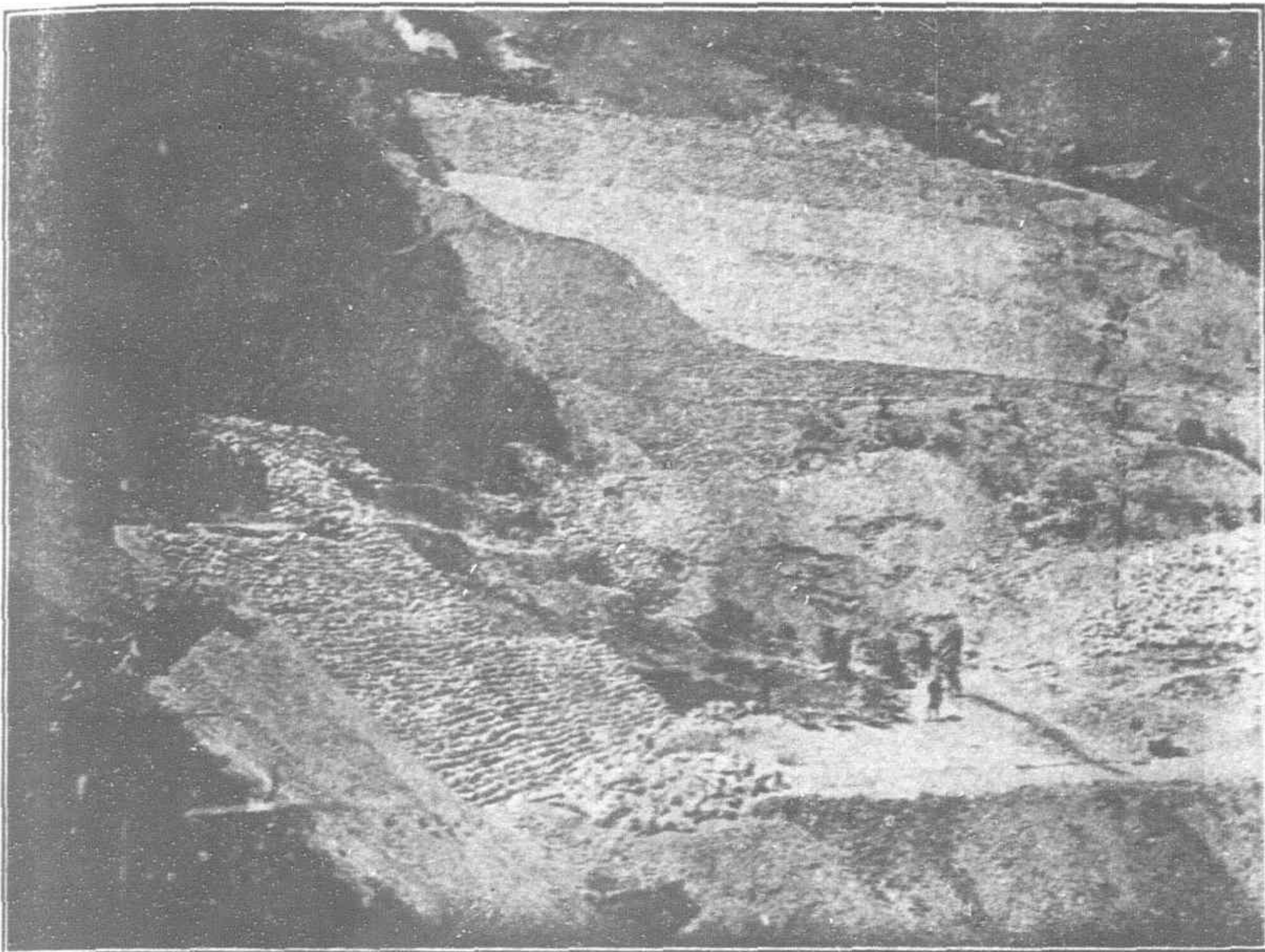


A LONG TRESTLE

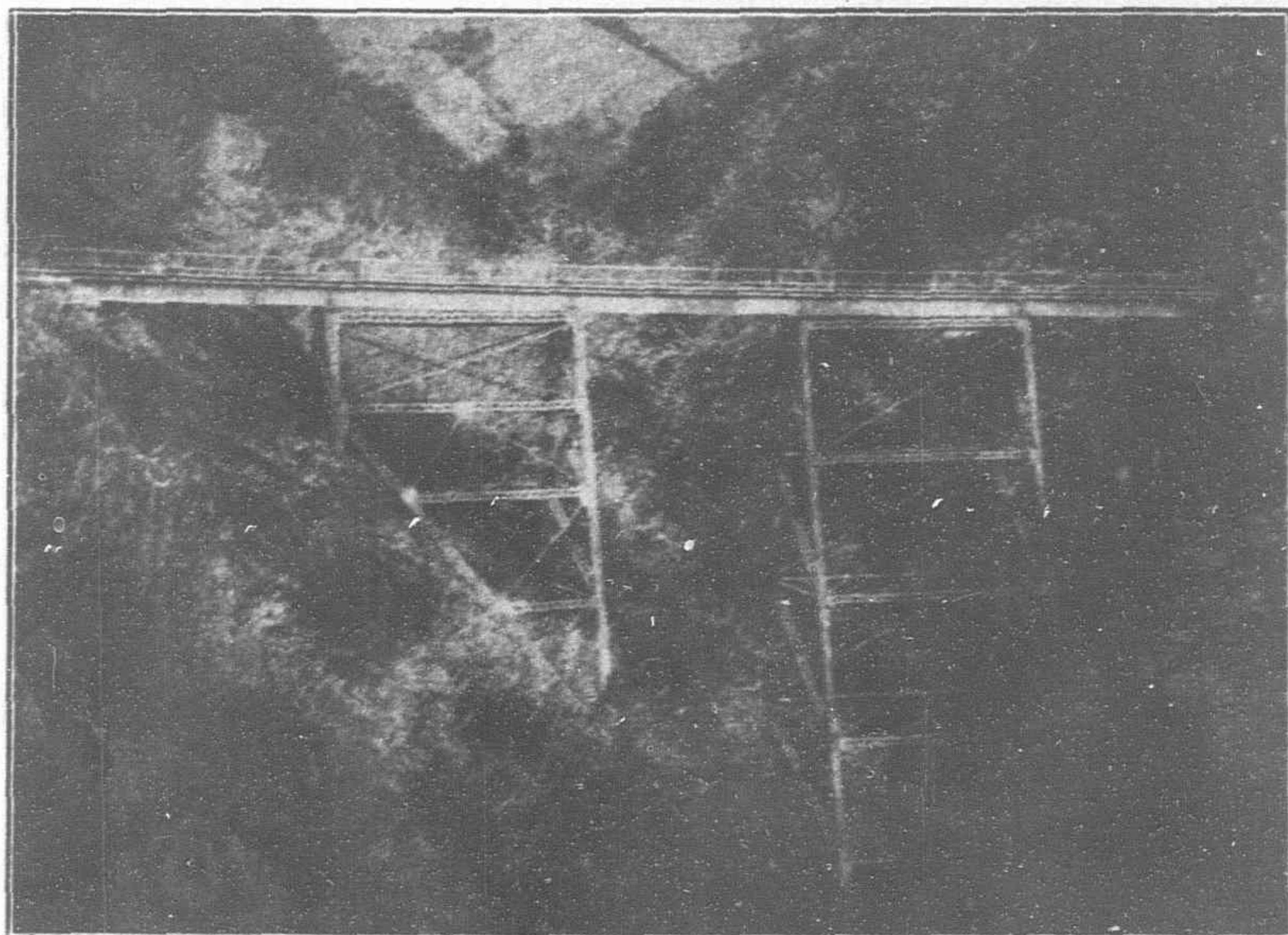


MASONRY BRIDGE CARRIED AWAY BY A LANDSLIDE

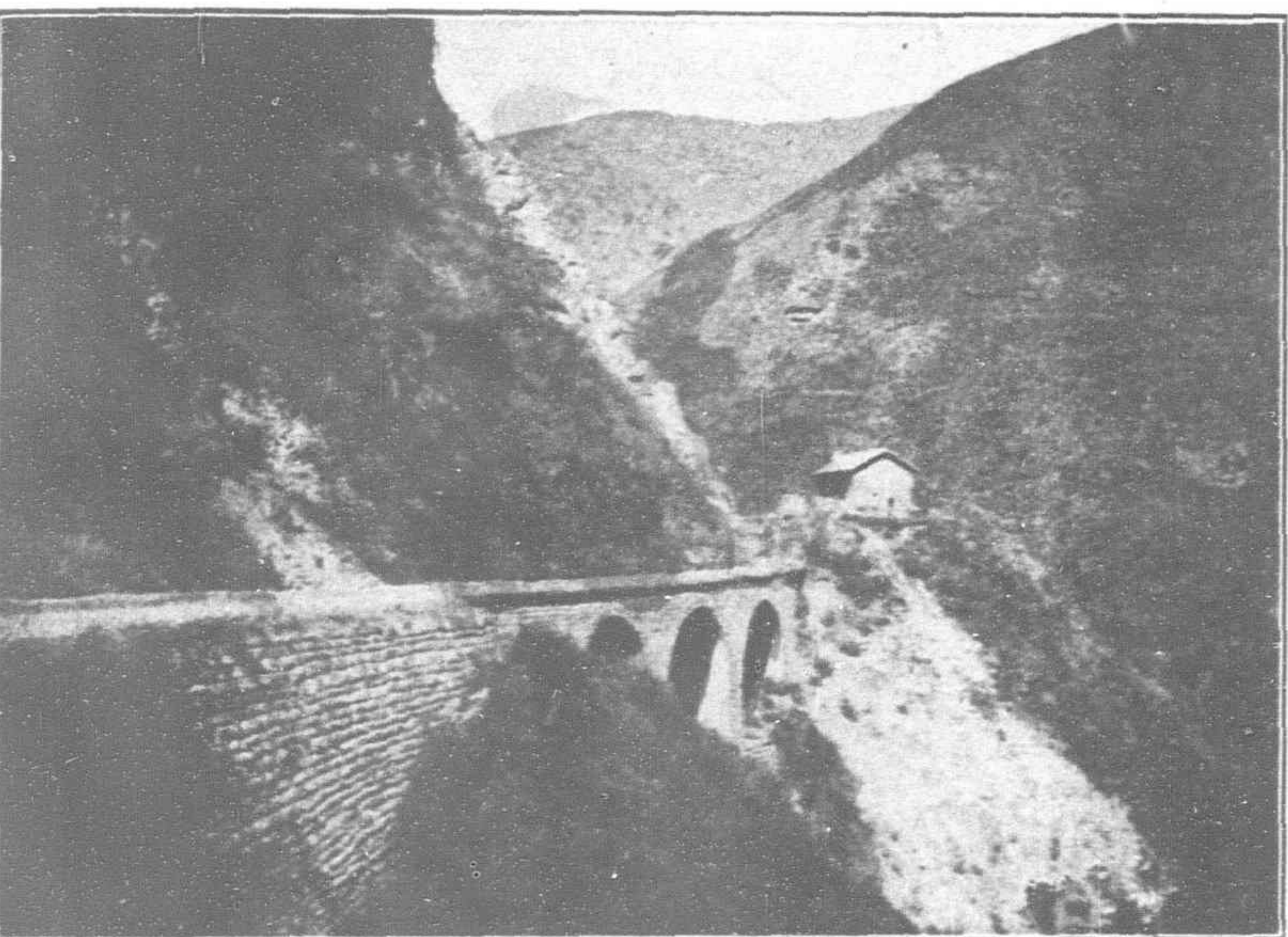
VIEWS OF THE YUNNAN RAILWAY



STAYING A LANDSLIDE



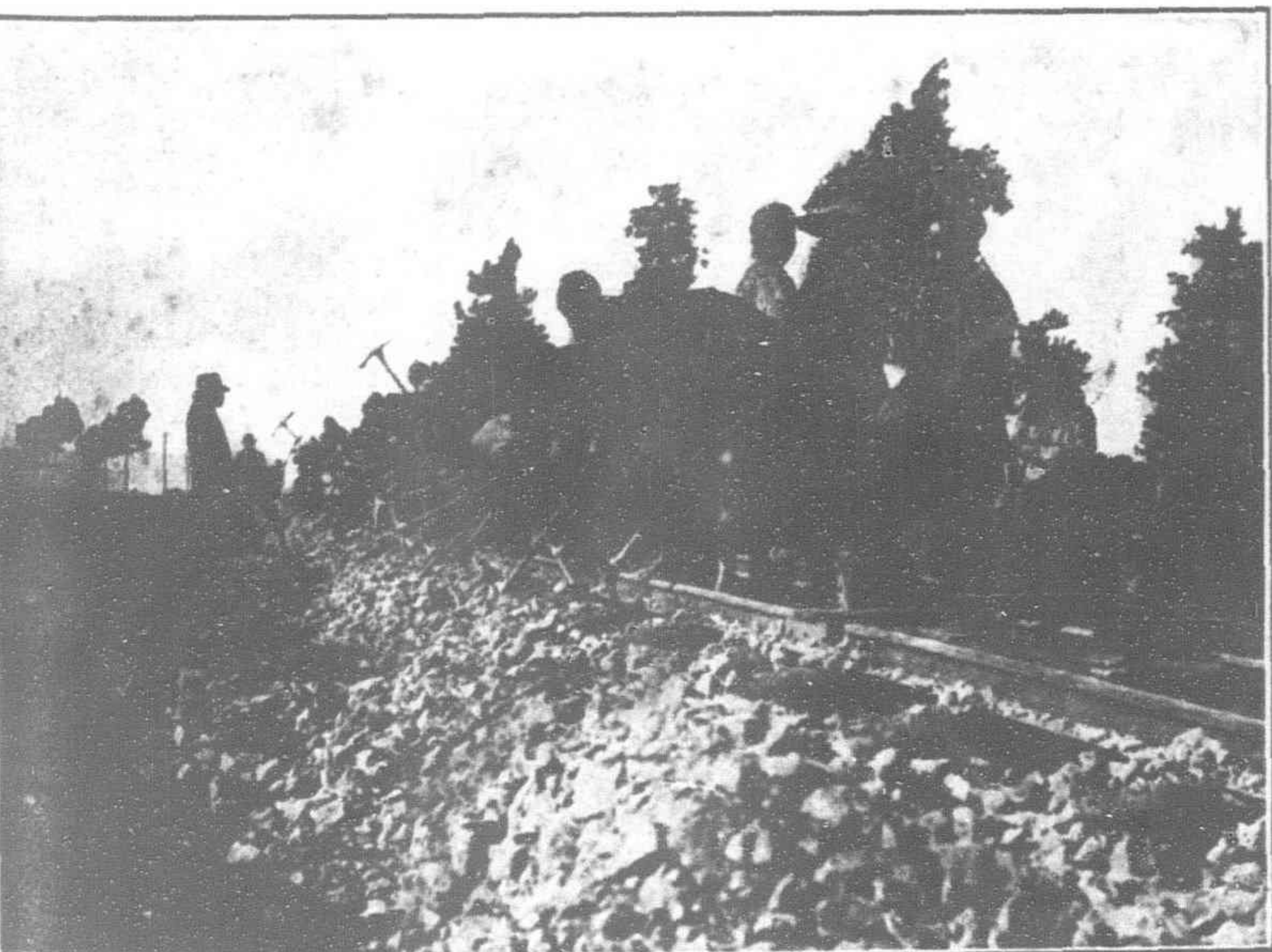
TRESTLE OVER A GORGE



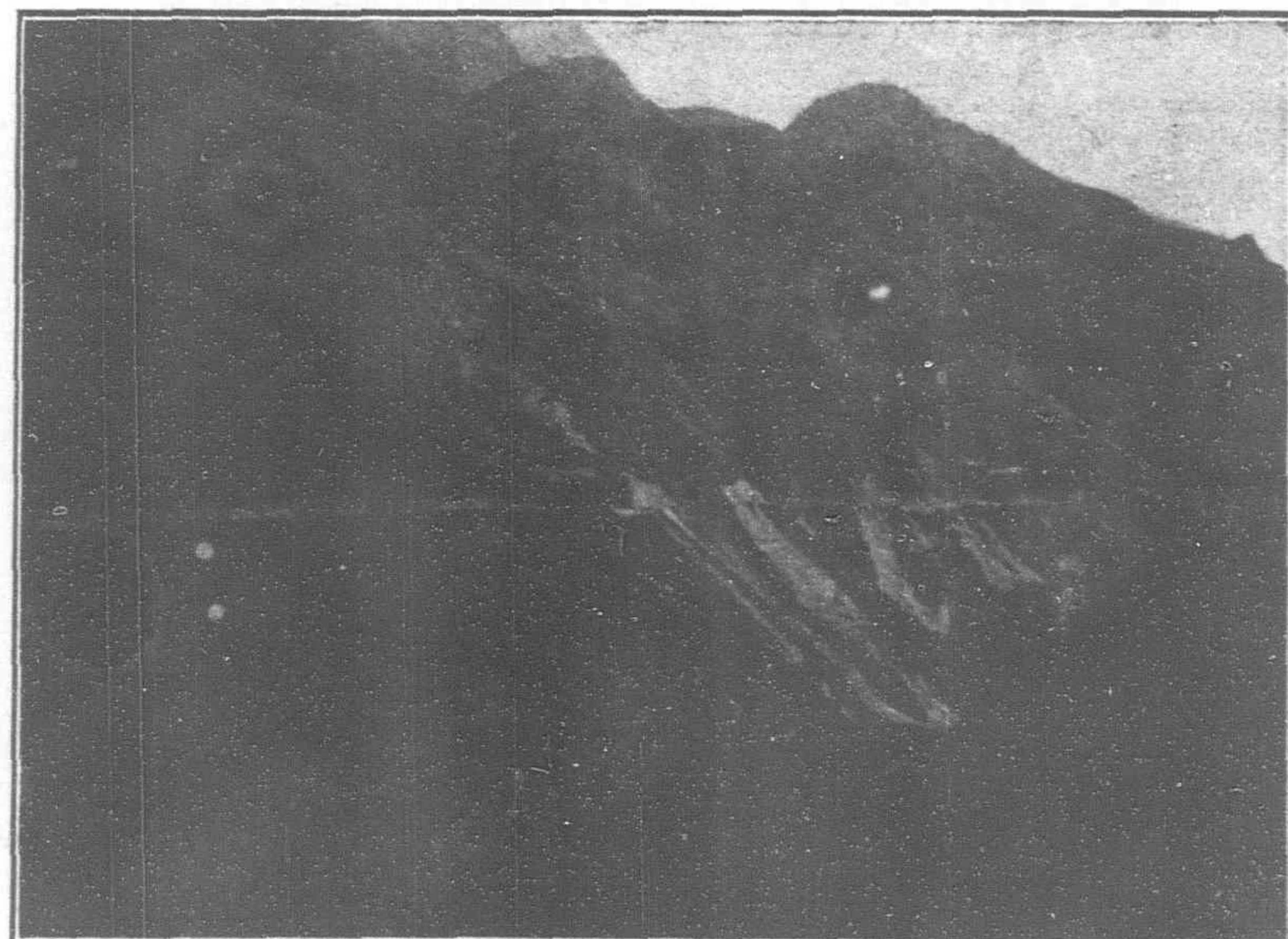
A SECTION OF THE LINE



A ROUGH SECTION



REPAIRING THE LINE



A SECTION OF THE GREAT HORSE SHOE

VIEWS OF THE YUNNAN RAILWAY

interesting reports, called further attention to the trade situation existing in Yunnan Province as a result of the working of the new railway. This document, republished in the June issue of the *Far Eastern Review* under the title of "Chinese Railway Project" is one of the most important contributions on the practical operation of foreign controlled political railways in China. Aside from one or two editorial comments in the Hongkong daily papers, the report has attracted little or no attention throughout the Far East. We venture to assert that if the same report had emanated

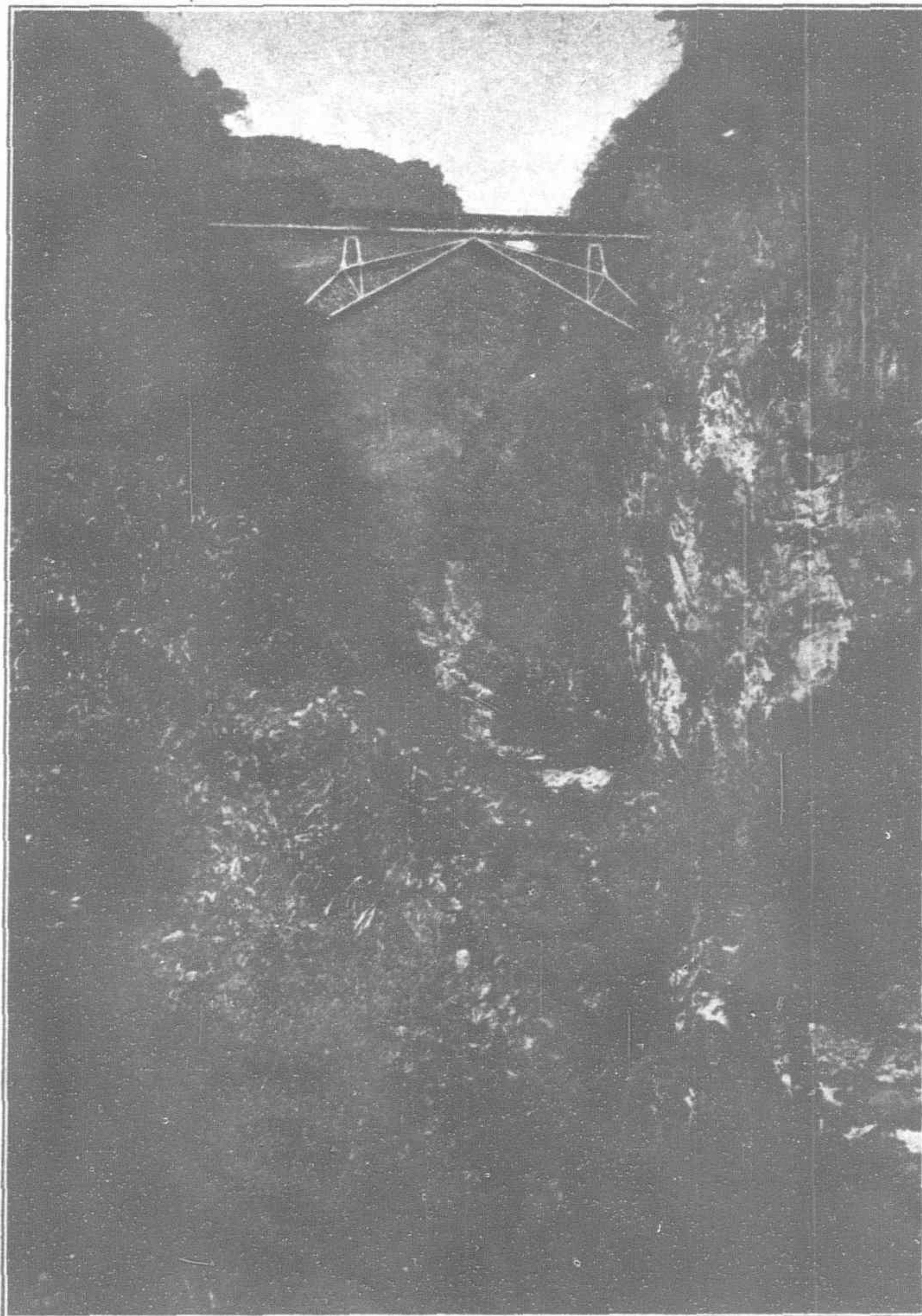
In other words the above paragraph tells the world that owing to the exorbitant freight rates exacted by the French authorities on material for the construction of projected Chinese Government railways in Yunnan, it is considered more economical to construct an entirely new railway through Chinese territory from Yunnan to an outlet on the West River, than pay the prohibitive French charges. In concluding the report Mr. Anderson states "In addition to freight on the long ocean haul from the United States to Haiphong, the freight on rails from Haiphong to where they are needed is about 150

per cent of the actual price of the rails in the United States."

The rates are quoted as follows:—"These rates are upon five classes of freight and are assessed upon the basis of five zones between the seaboard at Haiphong and Yunnanfu. The rates are based upon considerations of comparative value and comparative bulk of goods as well as weight, and in general follow similar classifications in France. They vary from 11 to 26 cents local currency (4.73 cents to 11.18 cents gold at present exchange) per metric ton (2,240 pounds) per kilometer (0.62 mile) for



THE FAMOUS BRIDGE



VIEW OF SAME BRIDGE FROM THE CANYON

from any foreign consul stationed in Manchuria, every newspaper in the Orient would have given it full publicity with editorial comment as another evidence of Japan's violation of her pledged word, and as proof of discrimination against European or American shippers in the operation of the South Manchurian Railway.

Consul-General Anderson opens his report with the following significant paragraph:—

"At the instance of the consulate general in Hongkong, several American manufacturers of railway material have sent a representative to Mengtze and Yunnanfu (both cities in the Province of Yunnan), and two important locomotive companies also have men on the ground, in connection with the contract to construct the proposed line from Yunnanfu to Luchowfu, on the Yangtze River, in the Province of Szechwan. The matter of freight rates, however, over the French railway from Haiphong, in French Indo-China, to Yunnanfu, is of such controlling importance that the projectors of the line are seriously considering the construction of a line from Yunnanfu to Nanning (on the Yoo River in the Province of Kwangsi), as a means of avoiding these excessive charges, as well as opening up the Province of Yunnan and west China by the new route. This road would give communication by rail and water with Hongkong and Canton."



THE BOULDER THAT CARRIED AWAY THE MASONRY BRIDGE (SEE PRECEDING PAGE)

the higher class of goods to 4 to 10 cents local currency (1.72 to 4.3 cents gold) per metric ton per kilometer for the lowest class of goods. To the present rates a surtax of 10 per cent is now added on the ground that exchange is low, but this surtax will be removed when the local dollar will equal 50 cents gold. On the basis of the rates fixed in the regular tariff the charges on the different sections for the several classes of goods amount to the following in gold dollars per metric ton:

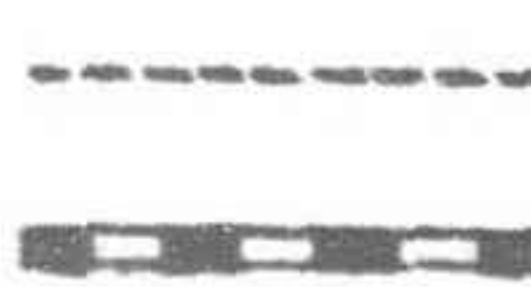
Sections	Distance	Class 1	Class 2	Class 3	Class 4	Class 5
	Miles					
Haiphong to Yenbay.....	104	\$11.73	\$9.60	\$9.60	\$5.33	\$4.26
Yenbay to Lao-kai.....	87	7.28	5.92	4.58	3.64	2.73
Lao-kai to Mengtze.....	111	19.90	16.07	12.25	9.95	7.65
Mengtze to Amsichou.....	27	2.40	1.95	1.48	1.20	.93
Amsichou to Yunnanfu.....	152	13.65	11.02	8.40	6.82	5.25
	481	54.96	44.56	36.31	26.94	20.82
Surtax.....		5.50	4.45	3.63	2.69	2.08
Total.....		60.46	49.01	39.94	29.63	22.90

OFFICIAL MAP OF THE YUNNAN RAILWAY



SCALE 1/1,000,000

0 5 10 20 30 40 50 Km.



ORIGINAL SURVEY

PRESENT ROUTE OF RAILWAY

EXTRA FEES.—The rates on various classes of goods from Haiphong to Yunnanfu, therefore, a haul of 481 miles, range from about \$23 gold to over \$60 gold per metric ton. To the rate of \$23 to \$60 per ton from Haiphong to Yunnanfu, the railway company adds a charge of about \$3 local currency, or \$1.30 gold, as a "customs" charge, which seems to be designed to cover the clerical expenses of clearing goods through the Indo-China and the Chinese customs. The charge has, however, no actual connection with the customs duties, and is independent of the duties levied either in China, where 70 per cent of the usual Chinese customs duty is collected or in Indo-China, where 20 per cent of the full import duty on goods from abroad is collected as a transit tax on goods thus entering China. The freight rates above given are modified somewhat by rates for carload lots, but are increased for goods of a dangerous nature, considerable quantities of which are used in railway construction and mining enterprises."

Since the above official report was made, we have received corroborative data from Yunnan concerning these freight charges and extra fees.

As indicated by Mr. Anderson, the freight rates are calculated on a fixed exchange of francs 2.50 to the Mexican dollar. At this rate of exchange or under, an arbitrary surtax of 10 per cent is added, to make up the loss in exchange. If the exchange is over francs 2.50

sugar, leather goods, light hardware, piece goods, paper, etc. The through rate to either terminal is \$127.91 (Mex.) per ton, plus the 10 per cent exchange surtax, plus 20 cents per package frontier charge. We are informed that railway construction material is also included in this class since the failure of the French Regie in Hanoi to obtain the contract for the short railway line from Mengtze to the Ko'chieu tin mines in March last. For car load lots of Class one, or over 5 tons in one shipment, the charge is \$104.03 per ton, plus 10 per cent plus frontier charge of \$4.44 per car.

This bears out Mr. Anderson's closing statement concerning the freight on rails from Haiphong to the interior making the rate from \$118.87 or say \$55 to \$58.00 gold per ton.

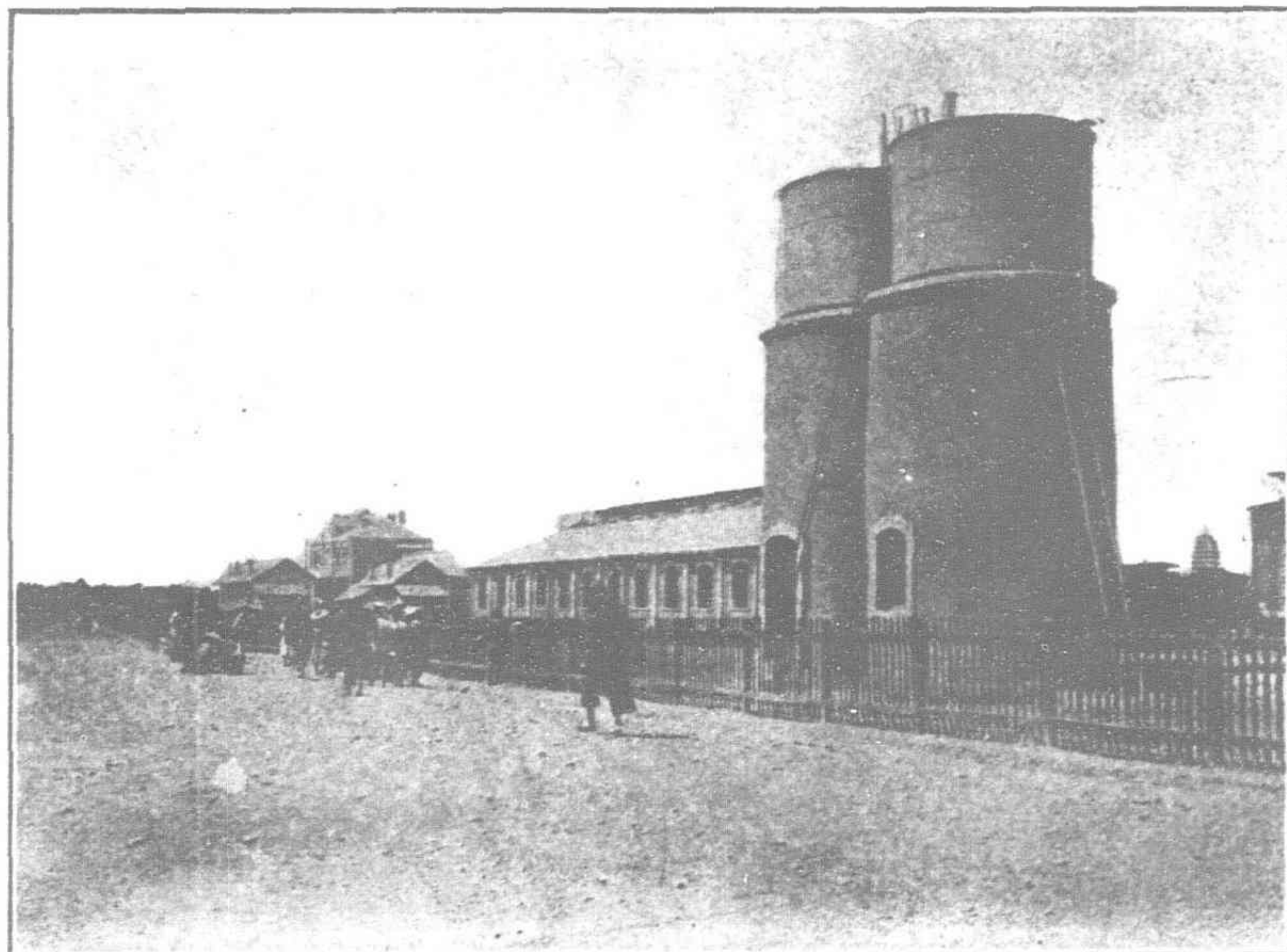
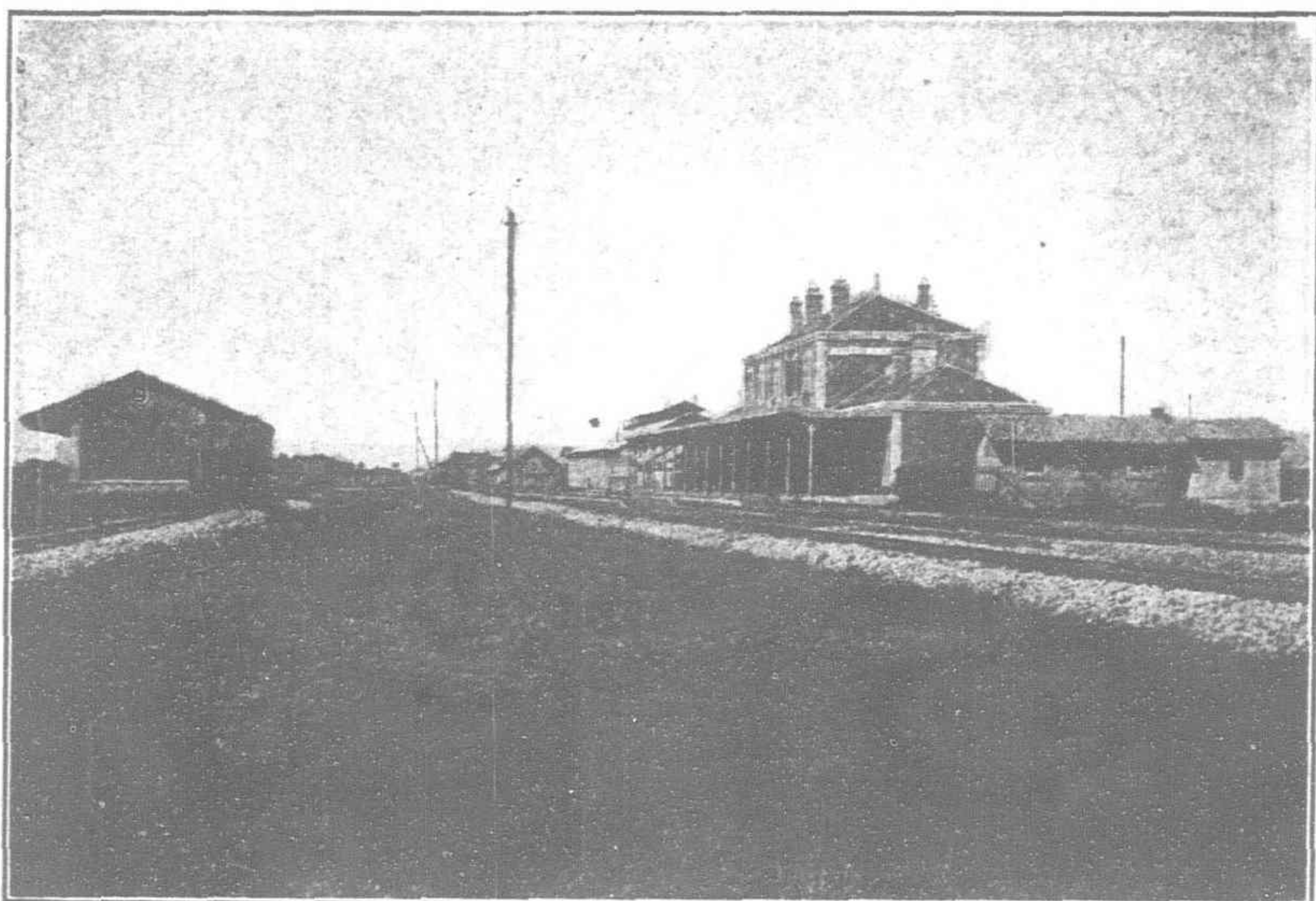
Class 2 includes such items of Chinese freight as native candles, ham, comestibles, beer in cases, mineral waters, mineral oils, cereals, jute fiber, Chinese sugar, matches, &c., and the rate is \$104.035 plus the charges as in Class 1. In carload or lots of over 5 tons, \$79.45 plus the same excess charges.

Class 3 includes tannery materials, stearine, crude oils, sesamun seed, rice, rivets, potatoes, beans, jute in bales, insulators, gavanized wire, nails, coal, briquettes, etc. Rate \$79.45 per ton, plus charges as in Class 1. In carload or lots over 5 tons, \$62.715 per ton, plus the surtax and frontier charge.

from May to December 1911 and again in April last, by washouts and land slides, another excess charge has been created. This is termed "Transbordment Charges" consisting of an extra tax ranging from \$1.00 to \$1.50 per ton, for transferring freight from one side of the break to the other, at the most about 100 yards.

Another source of railway income arises from the fact that bank checks or compradore orders are not accepted in payment for freight anywhere on the line, except from accredited French firms, and if the freight is settled for in Yunnanfu or Haiphong an extra charge is made to cover the cost of shipping the silver to Hanoi (the head office of the railway) at first class rates.

French products are protected in many devious ways known only to the officials, and as an instance it is maintained that Hongkong refined sugar is sold at Haiphong 30 per cent cheaper than the French product, but with the addition of the 7½ per cent French transit tax on this sugar, it cannot be sold in Yunnan at prices that will allow it to compete with the French article. Cigarettes manufactured in Pootung in China, under the treaty should be allowed to pass through Tonking at a transit tax of 2 per cent, but this is not allowed by the French authorities and the full transit tax of 7½ per cent is charged, plus first class railway



THE STATION AT YUNNANFU

to the dollar, the rate is reckoned at par. So no matter what the fluctuations of silver are, the shipper pays the railway "coming and going." As the dollar has only once since 1910 exceeded in value francs 2.50 in practice the 10% surtax has been almost permanent.

In addition to the exchange surtax, an arbitrary charge of \$4.44 (Mexican) per five ton car is levied at the frontier, ostensibly for examining the seals by the customs officials. If the shipment is less than a five ton car load lot, the charge is reckoned at 20 cents per package on the entire shipment. This, notwithstanding the fact that cars with small lots are dispatched through to Haiphong direct without breaking the seals.

The freight rates are undoubtedly exceedingly high, and in addition to this heavy burden on commerce, it is freely claimed, notwithstanding consular and official assurances to the contrary, that discrimination exists in favor of goods shipped to or from France. It is furthermore asserted that shippers other than French, are saddled with charges levied in Haiphong on import and export consignments that do not show in the official published railway rate schedule, and which are contrary to treaty stipulations.

There are five main classes of freight. Under the First Class are comprised provisions, explosives, beeswax, machinery, glass, porcelain,

Class 4, spelter, cotton yarn, raw cotton in bales, undressed hides, coal in bulk, bamboos, leaf tobacco, ores, native oil, marble, building stone, native iron, pig iron, &c. Rate \$62.315 per ton. In carload lots or over 5 tons, \$48.46 plus the excess charges.

Class 5, is for shipments of 10 tons or over, and includes spelter in ingots or slabs at \$35.00 per ton, plus 10 per cent, plus \$8.88 per car frontier charge, copper in ingots or slabs \$70.00 per ton, plus charges, metal for coining cash, \$60.00 per ton, plus charges, &c.

Even with this classification merchants declare that it is impossible for the shipper to know where he stands, as each shipment has to be referred to the railway authorities for the determination of its classification and through rate. These are changed arbitrarily without any notification to the shippers.

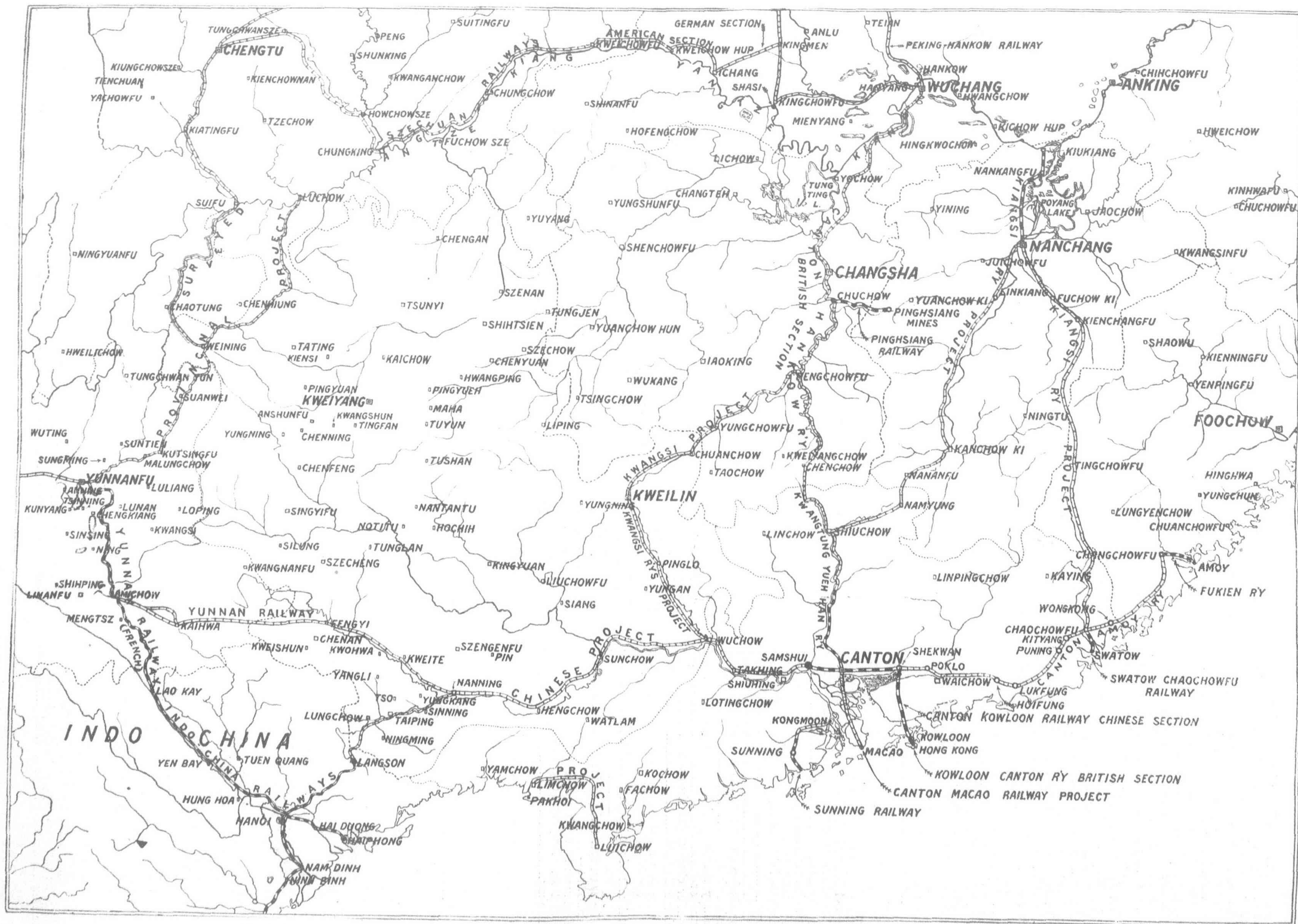
The through rates quoted above are for slow freight (*petit vitesse*) and the railway company reserves the right to take any time up to 27 days for delivery, the average time being 16 days for the through run of 830 kilometers. The cararan time from Burma, is about 32 days. Fast freight (*grande vitesse*) which averages six days from Haiphong to Yunnanfu, charges from 10 to 15 per cent advance on the slow rates.

As the railway has only been open since December 1910, and the service was interrupted

rates, which together with other charges come to 100 per cent of the actual value of the consignments in Yunnanfu. The imposition of such excessive rates is sufficient in itself to throttle trade and discourage shippers, but when the many surcharges are piled on and every petty annoyance possible is added to make merchants other than French feel their dependence on the system, the time must come when these foreign interests will resent the unfair treatment and request the observance of the treaties, and the rules of fair play.

The transit trade of Indo-China is largely the transfer of the products of the Chinese provinces of Yunnan and Kwangsi to Hongkong, and of various foreign products from Hongkong to the provinces. Over 95 per cent of this entire trade inward and outward is with Hongkong, which acts as the great distributing center for all countries. So the excessive freights rates and petty and illegal charges of the French railway tend to undermine Hongkong's commercial position, striking first at British commerce and through it at other countries interested in Western China trade.

It is almost hopeless to expect action on the part of any government in behalf of its nationals trading in Yunnan beyond a perfunctory representation of facts to the French Government. China, who should expect



THE FAR EASTERN REVIEW RAILWAY MAP OF SOUTH CHINA, SHOWING EXISTING AND SOME OF THE PRINCIPAL PROJECTED LINES.
DR. SUN YAT-SEN'S SCHEME IS NOT SHOWN ON THIS MAP

the greatest returns from the operation of the Yunnan line, is compelled in self-defense in order to develop the province to construct a new trunk line within her own territory at a cost of many millions. And just as soon as political conditions simmer down in China, and the country is again on its financial feet, the railway across Kwangsi to Yunnan, will be one of the first to claim the attention of the Chinese authorities. Once constructed, this line will divert the Yunnan trade that is now compelled to flow through Haiphong and over the French railway, into the ports at the West River delta, or Canton and Hongkong. In Tongking the danger of losing all by the grasping policy of the present regime is fully realized by the community at large, and the cry has already arisen for a sweeping reduction of the railway tariff charges, lowering of the transit dues, abolition of unjust taxes and the making of Haiphong into a free port.

An idea of the burdens imposed on Chinese trade passing through French territory may be gained from the following itemization of the charges levied on a trial shipment of merchandise from London to Yunnanfu. The bills of lading and invoices were signed by the London Chamber of Commerce and vided by the French Consul General at London, and shipped direct to Haiphong on a French steamer. Under treaty such shipments should be subject to the minimum tariff. The Shipment weighed 572 kilos gross and 380 kilos net and the net value landed at Haiphong was \$228.40 Mexican. Value of m'dise at Haiphong.....\$ 228.40

French transit due.....	15.79
Dock charges.....	.87
Disembarkment (lighterage handling)	2.08
Chamber of Commerce (Statistical Dept.)	.48
Teage.....	.35
Tout palan	.44
Commission on transit dues.....	1.35
Station charges.....	1.20
Railway freight (572 kilos 1st Class)	77.25
Transbordment charges.....	1.00
Frontier charges (11 pks @ .20).....	2.20
Chinese Customs.....	24.48
	\$ 127.49
	228.40

Total cost of 380 kilos net at Yunnanfu. \$ 355.89

The passenger tariff in force over the line is as follows:—

Distances between sections.

1st section. Haiphong docks to

Yenbay.....248. kilometers

2nd section Yenbay to Laokai

(frontier).....142. "

3rd section Ho-Kow, (frontier)

to Amichou.....221. "

4th section. Amichou to Yun-

nanfu.....252. "

Total.....863. "

Passenger tariffs per kilometer.

1st section. 2nd section. 3rd sect. 4th sect.

1st C. 0.05 0.06 0.065. 0.065

2nd C. 0.035 0.040. 0.045. 0.045

3rd C. 0.02. 0.023. 0.025. 0.025.

4th C. 0.006 0.007. 0.008. 0.008.

(Fourth class is for Chinese and Annamese only).

25 kilos of baggage free, excess varies according to class and section from 0.17 cents per ton kilo, in 1st to 3rd classes on 1st section, and 0.10. per kilo ton on same section for baggage 4th class, to 0.30 100 kilograms, per Kilometer on the first three classes on the 3rd section.

For tickets bought on the cars, the charge is approximately 30% in advance of the above rates.

The French railway authorities defend the high tariffs as necessary to secure a fair return on the investment, and defray the high cost of repairs and maintenance. The line is built along the sides of steep canyons for miles, and each rainy season causes serious landslips which tear away the rails, destroy masonry bridges, and create general havoc, which paralyzes traffic for weeks and months. Floods inundate complete sections and have carried away several steel bridges, which have had to be replaced. At one place as shown in the illustration a landslide carried away one

of the strongest masonry viaducts of the line. Many embankments are so steep that heavy and expensive masonry reinforcements are necessary. It is natural that each rainy season will bring trouble until the material has taken a slope at which it will stand. In the meanwhile the railway engineers have some serious problems to handle. In one place the slides are so frequent and the slope so steep, that they are building an artificial tunnel so that the mountain may slide down over it. At the present time we are informed that owing to the many transfers around the breaks of the line, goods can only be shipped in packages weighing 40 kilos or less.

These conditions, which make the through shipment of heavy freight impossible at the present time, may be the reason why the railway authorities have imposed the first class rates on railway material, to discourage such freight until the line is better prepared to handle it.

Official corroboration of the above state of affairs also appears in the Report of Mr. C. E. Tenant, the Commissioner of Customs at Mengtsz, dated April 15th, 1912. Mr. Tenant says,—“The causes for this diminution of trade are many; but the most important were the interruption of goods traffic on the railway, which lasted three months or so between Tonkin and Mengtsz and six months between Mengtsz and Yunnanfu, and, later on, the looting of Mengtsz by the Linanfu troops on the 3rd December. The disastrous interruption of goods traffic was the indirect consequence of the want of care on the part of the first engineers who surveyed the intended railway line. It is obvious that steep cutting in a comparatively soft soil cannot but result in gradual landslips, and when this cutting is done on a hillside—as has been done for about three-fourths of the whole length of the line from Laokai to Yunnanfu,—the whole hill surface must gradually slide down until nature has formed again a natural slope. Since the beginning of the construction of the line there have been landslips, but never so bad as during this year. They were due to the unusually early and severe rainy weather, which commenced at the beginning of May. The effects of the rains were felt not only on the railway line, but all over the province, and for three months we only heard of rains here, floods there, etc. A bridge at about Kilometre 91 was cut in two by a massive piece of rock which came down from an overhanging cliff some 300 feet up hill. Another bridge over a small canal, nearly dry in winter, in the plains of Tonkin, near Vietri, had its foundations undermined by the violence of the eddies; while practically the whole delta of Tonkin was under water.”

“All native goods for this province imported via Tonkin, being transhipped at Hongkong—a foreign port—for want of through steamer communication between all Chinese ports (Pakhoi and Hoihow (Kiungchow) excepted) and Tonkin, are *ipso facto*, extraterritorialised, and on their re-entry into China are treated as foreign goods.”

“Before closing this report, I have to refer to the transit dues, in some cases exorbitant, which are imposed on all foreign goods in transit through Tonkin. Were both Chinese and French Indo-China tariffs equal, there would be nothing to say; but, with the exception of opium, China is only allowed by treaty to collect duties on this land frontier according to the obsolete 1858 tariff, diminished by three-tenths on imports and four-tenths on exports, and as this 1858 tariff, fixed originally on a 5 per cent. basis, does not, on the average, represent nowadays much more than about 3 per cent. *ad valorem*, and as this very light duty is still lowered by three-tenths and four-tenths, the tariff does not come to more than 2½ per cent. *ad valorem*. This may be roughly checked by a glance at our figures. We show imports amounting to *Hk.Tls.* 4,647,996. Deducting *Hk.Tls.* 128,688, representing duty-free railway materials, there remains *Hk.Tls.* 4,519,308, on which a 5 per cent. duty would be *Hk.Tls.* 225,965; but our import duty amounted to only *Hk.Tls.* 112,395, representing just 2.5 per cent. *ad valorem*. For exports, with a total value of *Hk.Tls.* 6,750,304, a 5 per cent. duty

would represent *Hk.Tls.* 337,515, while our collection, *Hk.Tls.* 89,269, is equal to only 1.3 per cent. Compared with this, we find, for instance, in Tonkin, duties on cotton yarn varying between 34.50 and 42 francs per 100 kilogrammes, or *Hk.Tls.* 6.30 to *Hk.Tls.* 7.67 per picul, the fifth of which (or Tonkin transit dues) amounts to *Hk.Tls.* 1.26 to *Hk.Tls.* 1.53 per picul, while the whole import duty in China is only *Hk.Tls.* 0.700 per picul, and with the reduction *Hk.Tls.* 0.490. The difference is still more felt on tobacco, with a 75 francs import duty, or 15 francs transit duty, per 100 kilogrammes; and it becomes prohibitive with cigars and cigarettes, with 250 francs import, or 50 francs transit, duty per 100 kilogrammes. In fact, I am informed by the representative of a large cigarette firm that he can import a case of 20,000 cigarettes, Shanghai made, via Canton and West River, laid down in Mengtsz, for \$23 or \$24, while the same case via Tonkin comes to \$30 to \$32. This speaks for itself. *That the French Government should desire to protect its own industry and that of its colonies in its own territory seems quite natural, but that it should practically stop by too high tariffs foreign goods from competing on this market seems inconsistent with the principle of equal opportunities proclaimed broadcast as regards trade in China.* If trade with this province is to be fostered, it can only be done by the reduction of these Tonkin transit charges and by cheaper railway freight.”—“A survey to link up Yunnanfu with the coast by way of the West River was completed by Taotai Lo Kuo-Jui, who had been specially deputed by the Board of Communications in 1910. The future line would start from Poseh, above Nanning, on the West River, reach the southwestern corner of Kweichow province about Singhsien, enter Yunnan province towards Lopingchow, go north to Kützingfu, and west to Yunnanfu. This line, if ever built, will be a formidable rival to the Yunnan-Annam Railway; and the policy of high freights and high transit duties in Tonkin will certainly account for much in its early construction.”

Official and private reports all accentuate the facts above described. Excessive freight rates, illegal charges and unfair discrimination against products other than French, are closing the Door in Yunnan to European and American trade. The alleged unfair practices of Japan in Manchuria pale into insignificance before the conduct of France in Yunnan. China is weak, her despoilers are strong. What are the advocates of the Open Door and equal opportunity going to do about it?

(G. B. R.)

The Kiangsu Railway.—The directors of the Kiangsu Railway have petitioned the President, complaining of the unfair treatment of the British Corporation to the Railway Co., as under an agreement between the former Manchu government and the corporation, the corporation has only advanced *Tls.* 1,800,000, and on pleas withhold *Tls.* 12,000,000 which is deposited in the bank, drawing interest only at 2 per cent, and the ministry has to pay 5 per cent. on the money which causes a great loss. The directors ask that the ministry arrange some plan of work by which to draw the loan and not suffer it to remain idle. The ministry has been directed to consider and report on the subject.

The Yuet-Han Railway.—Recently a telegram was received by the directors of the Yuet-Han Railway from Szechuen stating that the people there have approved of handing over the control of the railways to the Government and asking that the shareholders in Kwantung should consider the question also, and let the Yuet-Han Railway become the property of the Government. However, the opinion at Canton, says a correspondent, has not changed since this question was mooted before, and the Cantonese are prepared to meet it with the strongest opposition. Quite a lot of trouble was caused about nine months ago by the Government's proposal to take over all the railways, and the feeling then engendered has remained, so that there is no hope of this proposal coming to anything.

THE RAPE OF MONGOLIA

RUSSIA'S RAILWAY POLICY IN CENTRAL ASIA, CLOSES THE DOOR TO EQUAL OPPORTUNITY IN MONGOLIA



MONGOL LAMA AND ATTENDANTS



MONGOL SORCERER. NOTE THE HAM BONE IN LEFT HAND

It has long been accepted in diplomatic circles that one of Russia's cherished plans, was to secure for herself the construction of a railway across Mongolia, from Kiakhta to Kalgan, and thus control a direct approach to Peking, invaluable to her commercial expansion and necessary to her political programme. There is ample evidence to prove that Russia has pressed China at various times to grant her a concession to build the Trans-Mongolian railway, and during the exchange of diplomatic correspondence arising out of Russia's opposition to the construction of the Chinchow-Aigun line, Russia actually proposed the Kalgan-Kiakhta line as a compromise. After her experience with the Chinese-Eastern and South Manchurian railways, the Chinese Government has however invariably declined to listen to any further overtures from that Power for railway concessions.

Russia's rejection of the neutralization plan for the Manchurian railways, as proposed by the American Secretary of State Mr. Knox, and her uncompromising opposition to the construction of the Chinchow-Aigun line, supplemented by her further protests against certain clauses of the Currency Reform Loan, have all had the effect of stiffening China's backbone against ceding her any further railway privileges. Every attempt on the part of China to develop Mongolia, and strengthen her position in Northern Manchuria, has met with the



A GRAND LAMA OF MONGOLIA

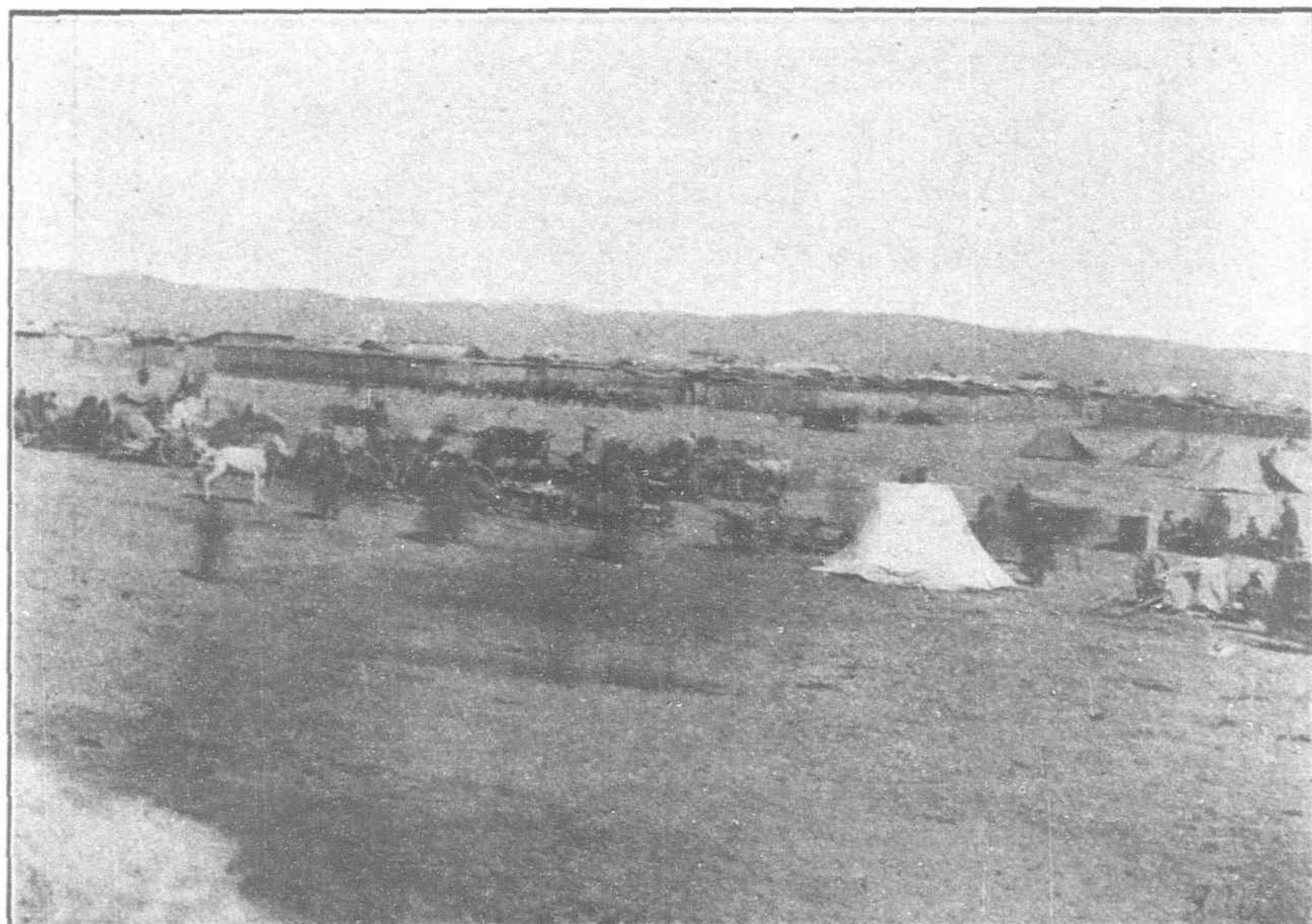
antagonism of Russia. When the Government of the latter Power served notice on China, that she could not construct the Chinchow-Aigun railway, a line within the confines of her own territory, because it would menace Russia's strategical position on the Amur, she disclosed to the world her true position *vis-a-vis* China.

Notwithstanding that Russia had exercised her undeniable rights to build strategic railways in Siberia and Central Asia, paralleling China's Mongolian border, and terminating within striking distance of Kashgar, and projected lines were aimed at Kobdo and Urga, China was not be permitted to make a move to checkmate these advances, and defend her commercial interests or strategic position. Russia's opposition to the Chinchow Aigun railway was the most arrogant abuse of power that the world has witnessed in many years, and clearly foreshadowed her present tactics and actions in regard to Mongolia and Northern Manchuria.

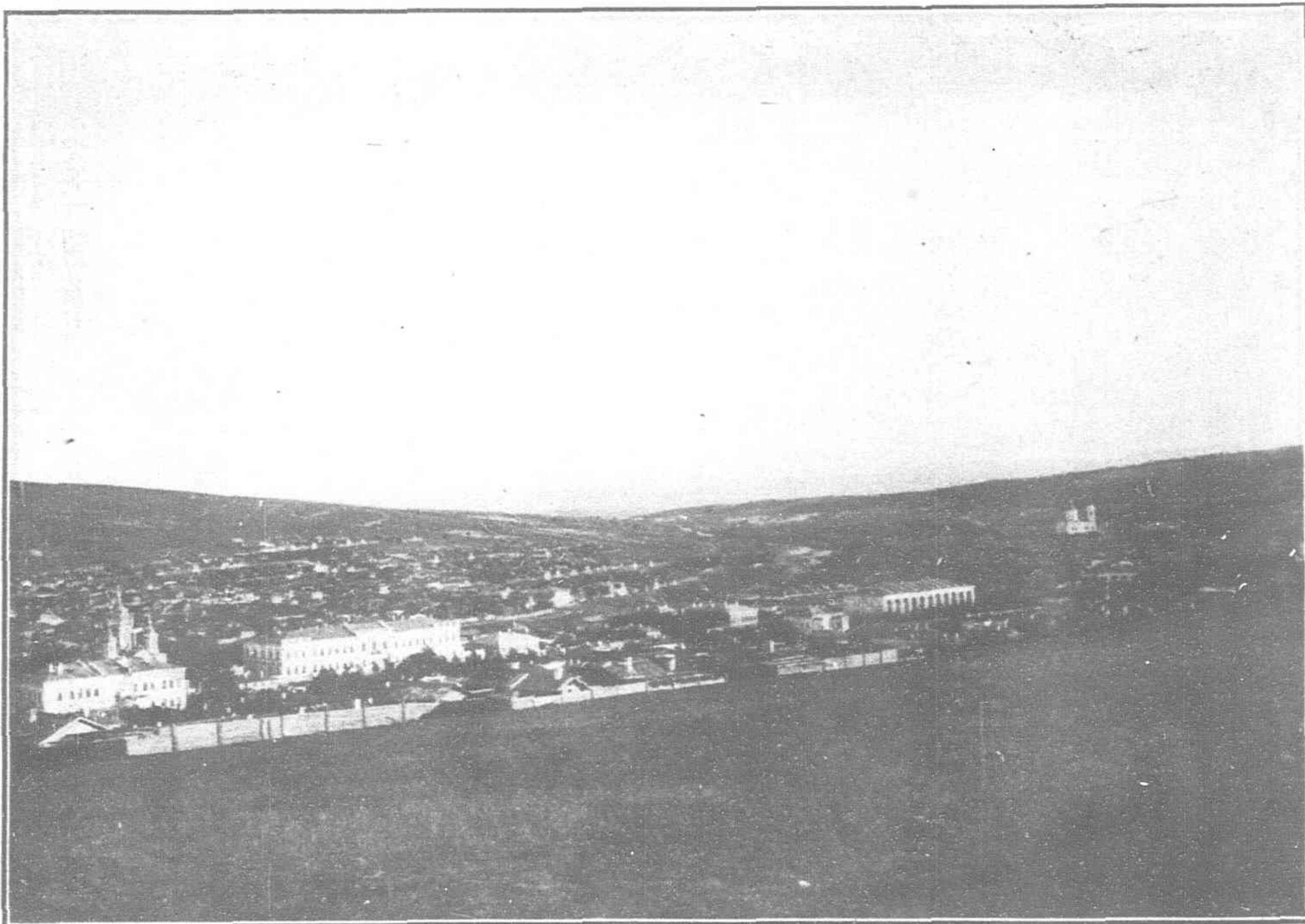
It had become a sort of set national policy on the part of the old Manchu government to prevent at all hazards the control of the approach to Peking by the Kalgan railway, falling into the hands of Russia, and during the loan negotiations of last winter when this railway was offered as security for a small loan to an American syndicate, this point was



CARAVAN TEA IN STORAGE OUTSIDE URGU



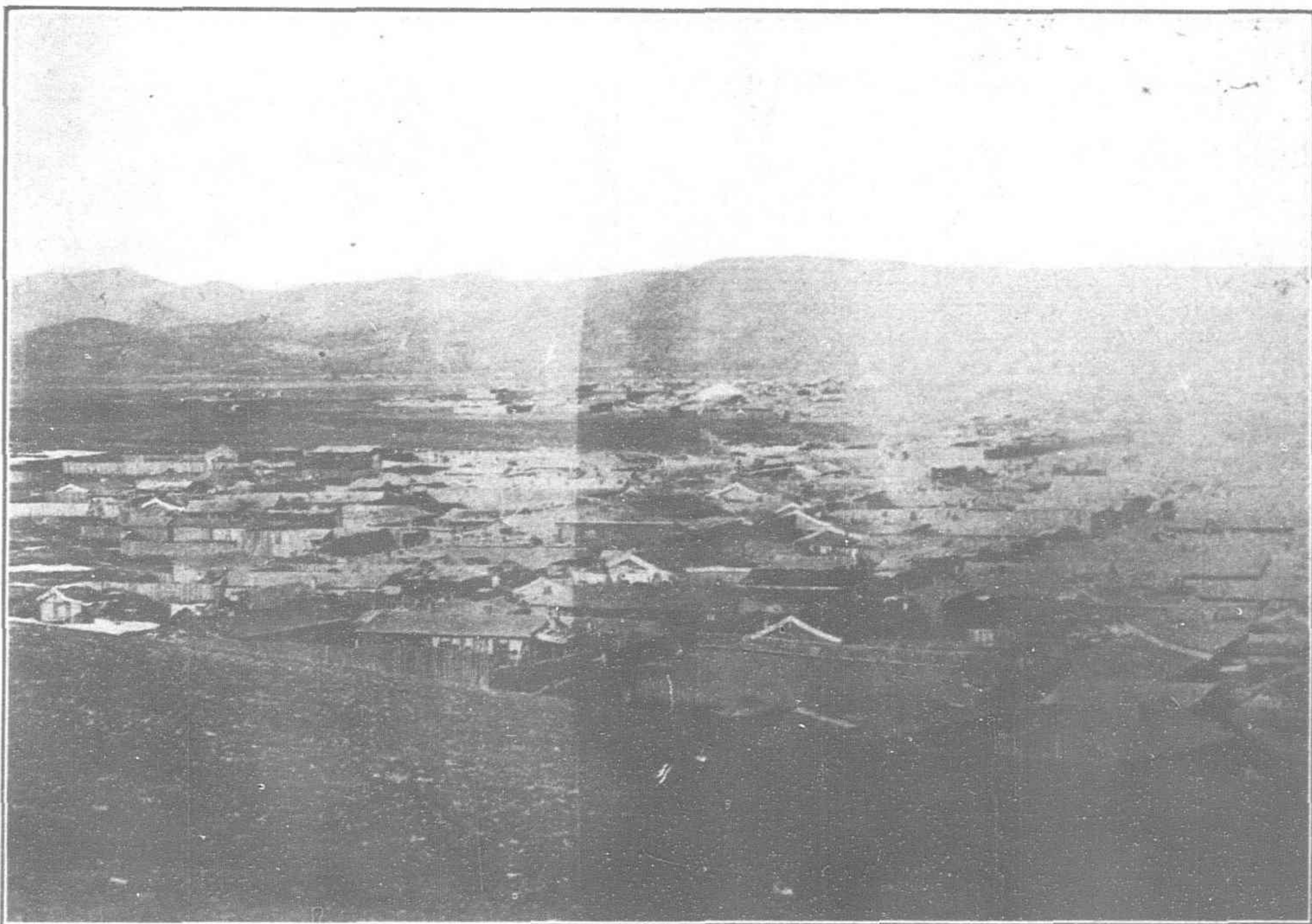
THE MARKET AT URGU



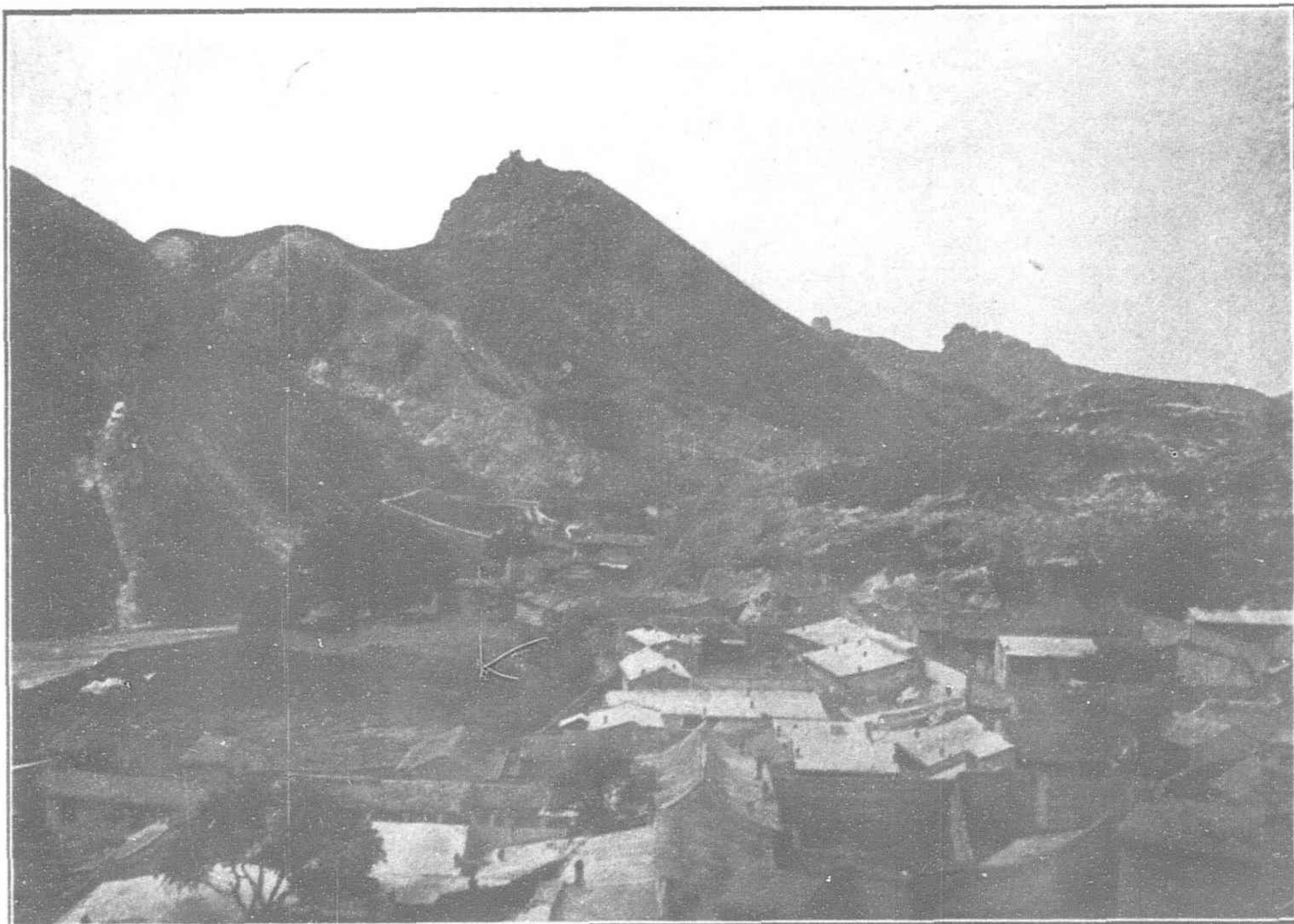
KIAMIKTA

emphasized. It came with great surprise, especially to Americans, that the new officials had overturned the traditions of the old regime, by pledging the Kalgan Railway as security for a loan with a Belgian syndicate, in which a Russian Bank had a large interest. The cancellation of the now famous Belgian loan, again postponed Russia's chance of controlling the Kalgan road to Peking, but to believe that she would tamely submit to the thwarting of her pet policy, is to overlook all her past history. What could not be obtained peaceably through diplomatic channels might be hooked by more indirect methods.

When the United States finally withdrew from the protracted and unsuccessful negotiations with the Republic of Columbia for the purchase of the Panama Canal strip, the state of Panama revolted and seceded from Columbia and declared its independence. America immediately recognized the new government, and then opened the negotiations resulting in the purchase of the present Canal Zone. America little thought that it had created a precedent, that might be invoked by other Powers in other parts of the world, to justify the acquisition of concessions considered vital to their national expansion. It would seem that Russia profiting by the lesson taught by America, has



URGA



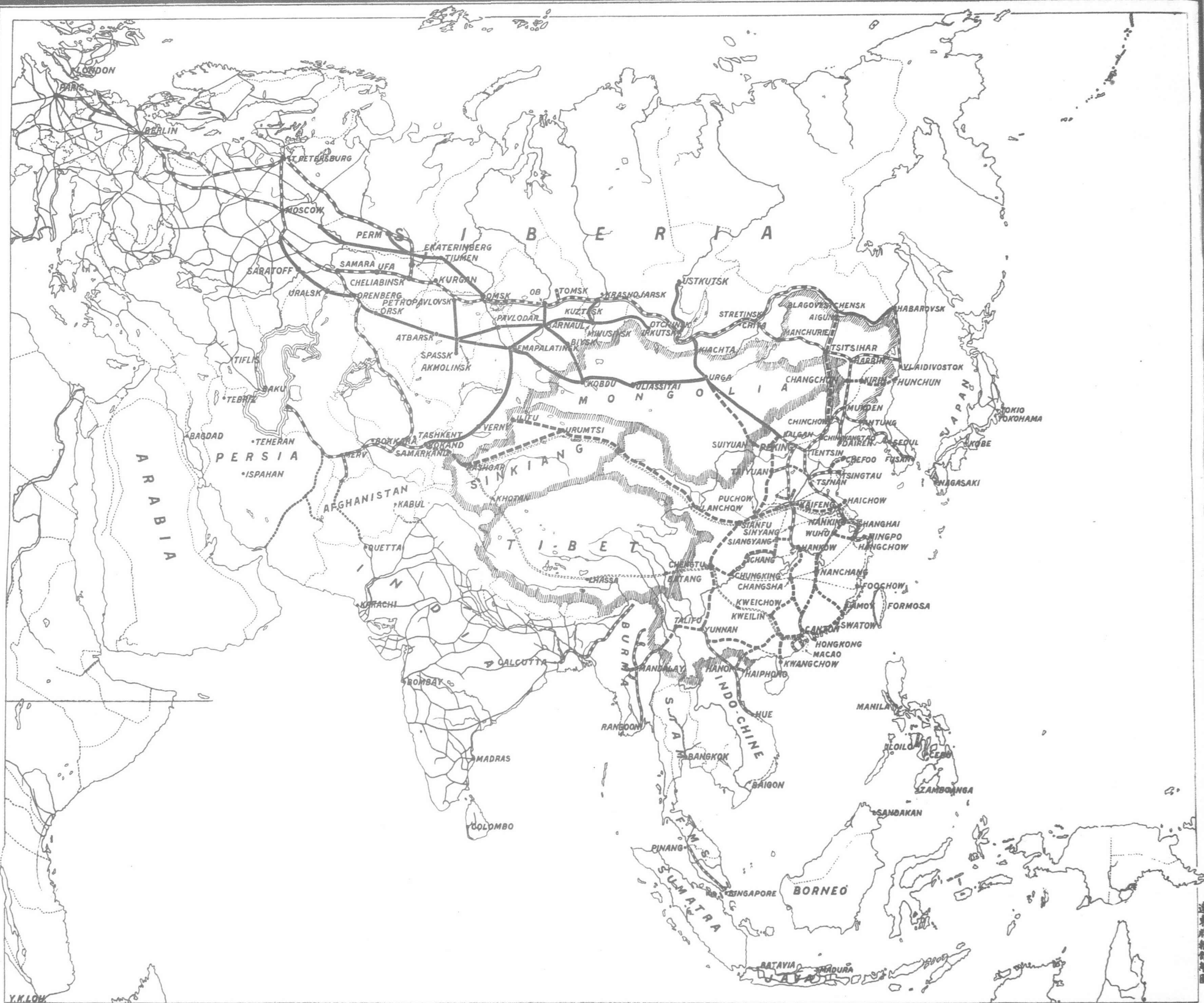
KALGAN

gone her one better, and when she found that it was impossible to obtain from the Chinese Government the coveted railway, mining and commercial rights in Mongolia, she availed herself of the situation caused by the general revolution by indirectly aiding a counter revolution in Mongolia, and recognizing the independence of the latter dependency. Russian newspapers are now publishing reports of negotiations with the new Mongolian government for railway and other concessions. Russia has served emphatic notice on the new Chinese Republican Government that she will not tolerate the dispatch of any armed force into Mongolia, to restore the dependency to its old allegiance. In other words Mongolia, is from now on to be considered as an independent state, and whatever concessions are secured from the Mongolian Government at Uрга, must therefore hold good.

Russia is the only Power, which recognizes the independence of Mongolia, and has undoubtedly made it part of the bargain that she be granted a monopoly of railway and industrial concessions. And which nation is in a position to seriously protest against this open attack on the integrity of China? Great Britain by reason of her understanding with Russia and Japan will hardly raise her voice in opposition to the arrangements, and in self defence will be compelled to strengthen her

interests in Tibet. Germany cannot afford to divert her attention from the North Sea, France has the same interests in Yunnan as Russia has in Mongolia, and being her ally and banker would hardly oppose her schemes in Mongolia, and America whose moral support might have benefited China, is debarred from protesting against a situation which had the Panama Canal episode as a precedent.

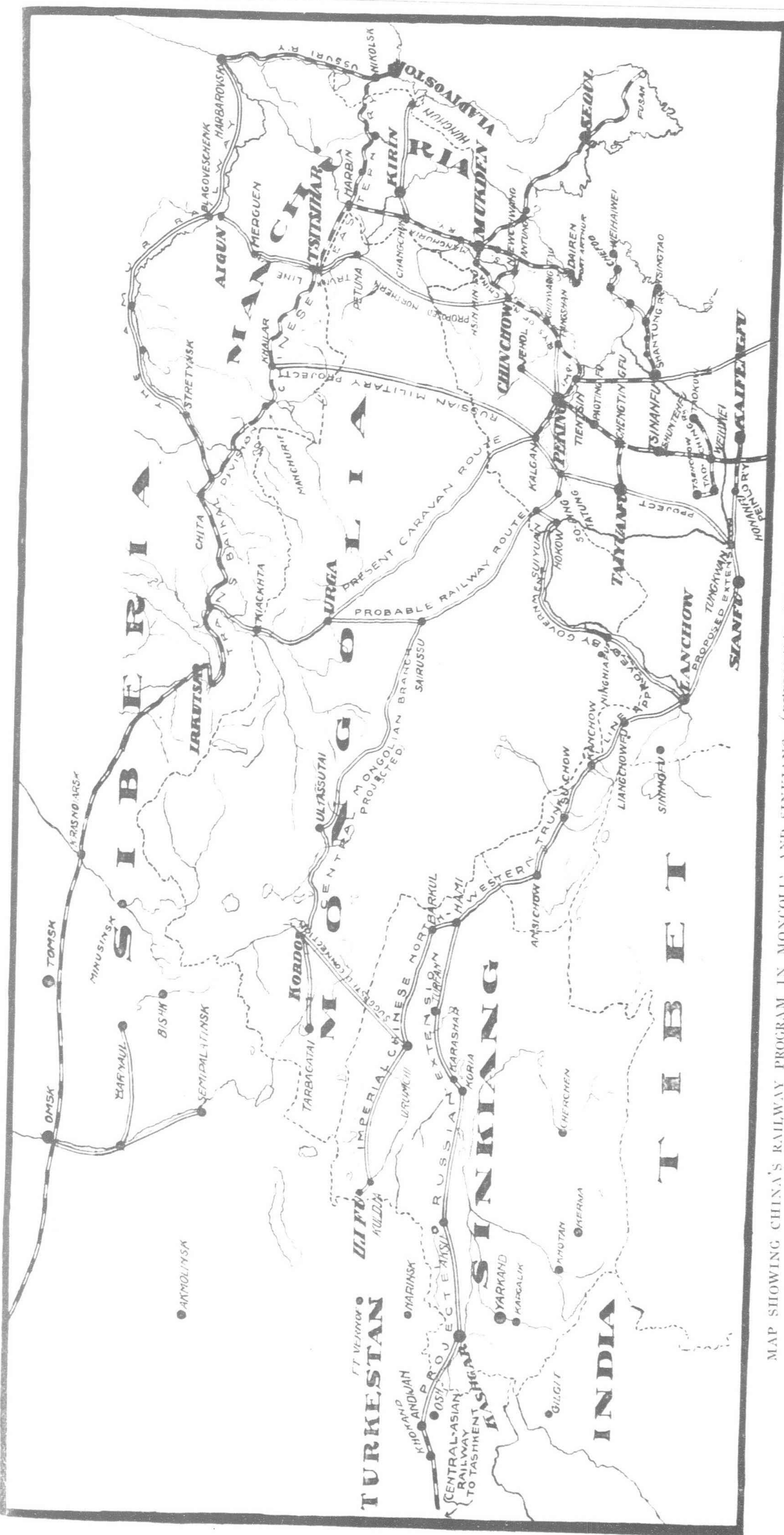
It would appear that Russia has now a clear field, and can prosecute her policy of Mongolian commercial expansion without serious opposition. And what are the first fruits of the policy? Russian newspapers are full of a great scheme to link Moscow with Peking by means of a new railway through Mongolian territory, and add that the Russian Premier has promised to guarantee the interest on the capital needed for its construction. This without consulting China's wishes, proclaims to the world that Russia now arrogates to herself the sole right to construct railways through Mongolia and by the act of guaranteeing the interest on the cost of these lines foreshadows her ultimate annexation of the territory.



THE RAPE OF MONGOLIA

MAP ILLUSTRATING RUSSIA'S ASIATIC RAILWAY PROGRAM

Lines in Operation are shown ; Russia's Projected Lines ; China's Projected Lines ; That part of the Trans-Siberian Railway between Omsk and Chita, to be doubled by the end of this year is shown ; The Chinchow-Aigun Railway projected by China, and prohibited by Russia is shown . Although Russia emphatically refused to acknowledge China's right to construct railways within the confines of her own territory on the grounds that they were a menace to Russia's strategic position on the Amur, the Map clearly shows that Russia has paralleled China's Mongolian border on the North and East, and with the completion of the proposed lines will completely encircle Mongolia and Sinkiang. In the above map the Trans-Mongolian Railways (Kalgan-Urga-Kiahkta and the line Uliassutai and Kobdo) are indicated as Russian projects in accordance with the Russian official program.



MAP SHOWING CHINA'S RAILWAY PROGRAM IN MONGOLIA AND SINKIANG, (REPRINTED FROM THE FAR EASTERN REVIEW OF MARCH, 1910)

There are two projects for the construction of the railway. One revives the old and much talked of Trans-Mongolia line from one of the stations of the Trans-Baikal railway through Kiakhta and Urga to Kalgan, connecting there with the Chinese Government railway to Peking. This line would be about 1,200 Russian miles long and the most feasible and economical one to construct.

The second project or the southern line, provides for an entirely new construction. Starting from Moscow the line will reach Semipalachensk, via Suizuran, Samala and Orenburg and running eastward from Semipalachensk, taking a course parallel with north latitude 50, will reach Urga the Mongolian Capital and, traversing the Mongolian plain, to Kalgan. The construction of the line involves great difficulties and immense expense, it being necessary to develop a new route in the waste lands of the Gobi desert. It is also necessary to construct a new trunk line between Moscow and Semipalachensk utilizing a portion of the Orenburg-Tashkent Railway. That line alone extends for about 2,500 (Russian) miles, about one-third of the entire mileage between Moscow and Peking. In addition the line between Semipalachensk and Urga covers 3,000 (Russian) miles and would then have to connect with the first project from Kiakhta to Kalgan another 1,200 (Russian) miles.

It would appear from Russian press reports that American, French and German financiers are ready to construct the lines and have opened negotiations with the Russian Government to this end. Like many of the new Russian railways they are not expected to pay for many years to come, and must be constructed under a government guarantee. The Russian official railway programme includes the following lines in Asiatic Russia, which are to be built as soon as the money can be secured.

Petropavlovsk-Akmolinsk, 885 miles; Spassk-Spaskiyzovod, 440; Spaskiyzovod-Station to Mondibay, 586; Kokchetav-Kurgon 260; Orsk-Troitsk, 280; Barnaul-Urga, 1,200; branch to Kuznetsk, 106; Minusink-Otchinsk 266; Krasniarsk, 300; Borsk-Kuztesk-Minusink, 380; connection of the Lena River with the Siberian Railway at Ust-Kutsk Station, 466 miles. It will be noted that most of these lines tighten Russia's grip in Mongolia, and strengthen her strategical position with China.

Russian opinion is not unanimous in favouring the construction of the Mongolian projects, and there are those who violently oppose the much advertised Kiakhta-Kalgan line.

It is urged by the opponents of the scheme that both the projected lines would be disadvantageous to Russia from political and economic standpoints, because the Kalgan-Urga railway would prove a channel by which Chinese emigrants, as well as Chinese troops in case of war, could be brought to North Mongolia to the very frontier of Russia, and thus would become a base for a Chinese army operating against Russia. For that reason the Chinese Government has been greatly interested in this project for a long time and has partly assisted it by the construction of the Peking-Kalgan line. The construction of either of the lines moreover would be detrimental to Russian commercial interests. The Kalgan-Urga-Kiakhta railway would kill all the Russian railways east of Baikal, and would enable Chinese and foreign goods to be brought to North Mongolia at low freight rates. As to the second line through Orenburg and Semipalachensk it would be even more disadvantageous than the former, because by this railway all passengers would go from the Far East to Europe and vice-versa, and thus it would kill the Trunk Siberian railway in this respect, because it is much shorter than the latter.

Those who hold this opinion, however; are manifestly in the minority and belong to the anti-expansion element. Russia needs Mongolia, and has taken the first step towards the annexation of the territory. There is no other interpretation to the trend of events.

THE KWANGTUNG SECTION OF THE YUEH-HAN OR CANTON-HANKOW RAILWAY

There is renewed activity in building the Canton-Hankow railway line northward. This line, which will connect Hongkong with central China, is operating to Lai Tang, a small village little more than a sand heap, 67 miles from Canton. Grading and bridging up to mile 70 is practically completed, but grading between there and mile 85 is backward because of objections from natives. Bridging and grading up to mile 112 is practically complete. Work between mile 130 and mile 140 is in progress and that on the section up to 180 is being rapidly advanced.

The Kwangtung Mercantile Administration of the Yueh-Han Railway Co. (Ltd.), a corporation of merchants, was organized with the assistance of the provincial government about six years ago to take over the line as originally projected. Its capital was \$40,000,000 Canton currency (at present worth about 48 cents to the Canton dollar) for constructing that portion of the great through Canton-Hankow system which lies in the Province of Kwangtung, the portions of this through system in Hupeh Province south of the Yangtze and in Hunan Province being in the control of provincial companies organized to construct the lines therein. The shares in the Kwangtung company were placed at \$5 local currency each, and it was agreed, and has materially been adhered to, that only stockholders would be employed in building and operating the line. This company, under direction and more or less control of the provincial government, raised considerable money by stock subscription and placing a loan on the line already constructed. The latter was financially successful, and in spite of financial demoralization and many drawbacks trackage was considerably extended.

Plans for Completing the Line.—The disturbances attending the announcement of the Government's policy of Government ownership of trunk lines a year ago, however, stopped work upon the road entirely. The general uncertainty attending the future of railways also rendered it unwise to proceed with construction. Above all, the railway had used about all the funds available. Later the revolution came on and still later there was considerable disagreement as to administration of the line. Lack of funds has prevented general advancement during the current year.

Apparently the provincial authorities and present management of the company have determined that the stockholders shall complete the line as far as possible with the balance due on subscriptions and have decided to call for payment of a third installment on the stock. Co-operation is indicated in a letter sent by Governor General Hu Han-ming to the president of the company stating that there has been great delay in completing the railway as a result of many difficulties and urging that there be no further delay in making the call for this third stock payment. What this will net the company is doubtful. Par value of shares is \$5 silver. The first installment collected in 1907 was \$1 silver, which netted, including interest on capital placed in loans and other assets, \$8,888,093 local currency, or more than the face value of the installment on the stock. The second installment, collected in 1909, called for \$1.50 local currency per share, which netted \$10,849,512 local currency instead of the \$12,000,000, the full stock issued called for.

Third Installment Insufficient—Loan Planned—Financial Statement.—The proposed third installment of the subscriptions of stock called for is the remaining \$2.50 local currency per share, which would net \$20,000,000 local currency if the full amount were realized. Opposition to the call for the installment is serious, however, and it is believed that nothing like the full amount called for can be

realized, while even the entire amount would hardly complete the work and meet all liabilities. The company, therefore, has sought loans, which doubtless can be had when things in China again become normal and the exact legal and political status of the company can be established. Its financial position at the beginning of the current year, which is believed to be substantially that of the present time, is indicated in the statement, on page 179, in local currency, of receipts and expenditures from 1907 to January, 1912:

At the time of this financial statement it was officially reported by the management that the state of the lines of the company was as follows: Open to traffic, 49.7 miles; under construction, 63.8 miles; with rails laid but still unopened to traffic, 6 miles; already surveyed and located, 60 miles; yet to be located, 30 miles; total, 209.5 miles.

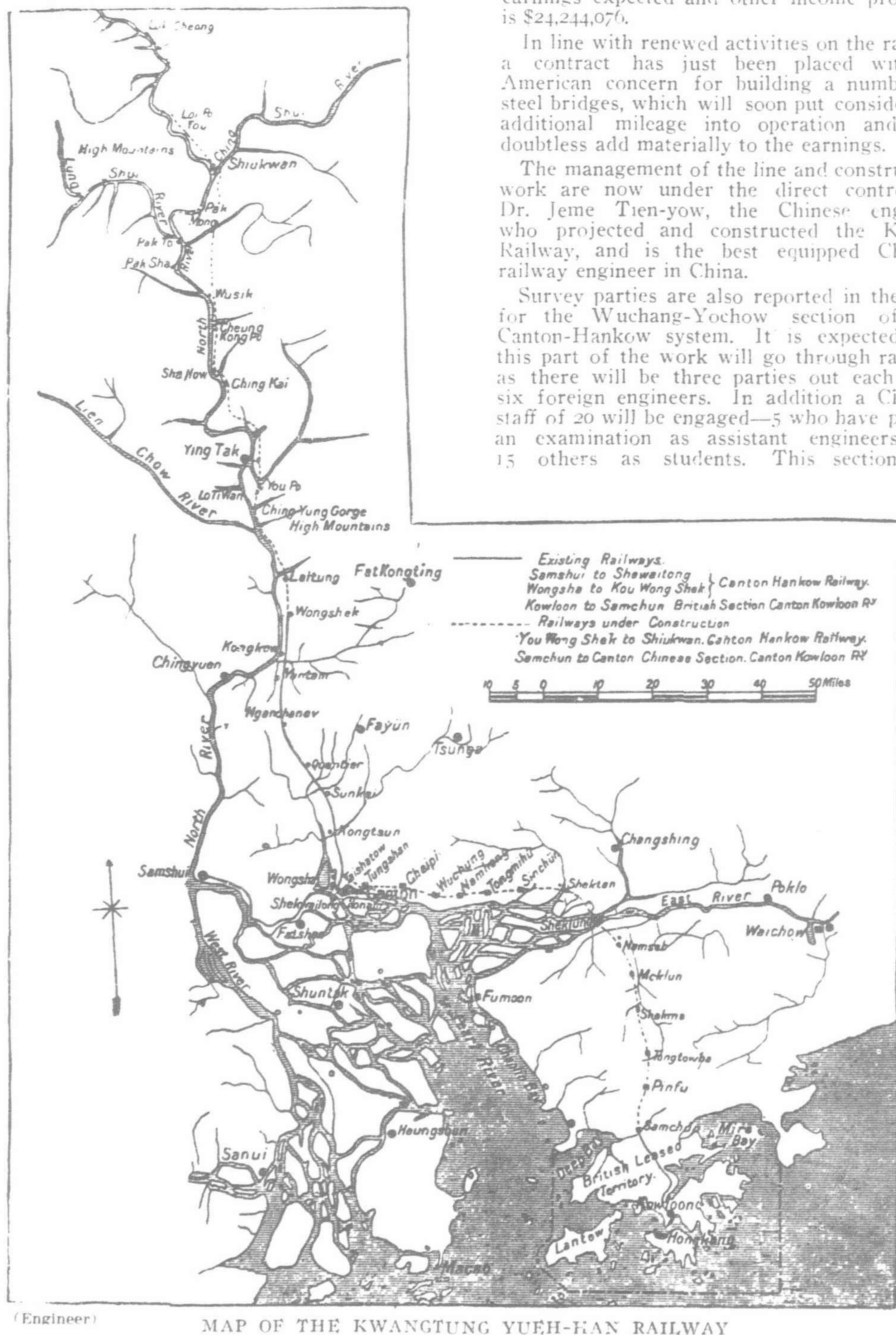
It was also estimated at the time that the entire line from Wongsha to Ping Shek could be completed within four years from 1912 at an estimated cost of \$19,600,000, local currency, of which the balance on hand of \$944,824, materials in stock worth \$1,400,000, and receipts to be realized from traffic and interest amounting to \$1,400,000 would form a part, leaving \$15,855,276 still needed for the main line.

Branch Lines—Bridge Order.—In addition to expenditures necessary for completing the main line, the company must necessarily construct two branch lines to connect it with the Canton-Kowloon line and the Sunning Railway extension. The first—about 4 miles long—is estimated to cost \$302,400, the second branch, of about 50 miles, \$8,086,400 local currency. The total amount needed for completing the system in Kwangtung Province, allowing for earnings expected and other income probable, is \$24,244,076.

In line with renewed activities on the railway a contract has just been placed with an American concern for building a number of steel bridges, which will soon put considerable additional mileage into operation and will doubtless add materially to the earnings.

The management of the line and construction work are now under the direct control of Dr. Jeme Tien-yow, the Chinese engineer who projected and constructed the Kalgan Railway, and is the best equipped Chinese railway engineer in China.

Survey parties are also reported in the field for the Wuchang-Yochow section of the Canton-Hankow system. It is expected that this part of the work will go through rapidly, as there will be three parties out each with six foreign engineers. In addition a Chinese staff of 20 will be engaged—5 who have passed an examination as assistant engineers and 15 others as students. This section will



(Engineer)

MAP OF THE KWANGTUNG YUEH-HAN RAILWAY

YEAR	RECEIPTS	AMOUNT	EXPENDITURES	AMOUNT
1907	\$1 per share from call of first installment of total shares valued \$ 5 each	\$ 8,888,093	Payments for the resumption of this line from the American Development Co. for salaries of workmen and officials and purchase of materials, etc., from 1907 to 1911	\$21,979,559
1909	\$1.50 per share from call of second installment up to eighth month of 1911	10,849,512	Accounts still outstanding	79,800
1907-1911	From traffic and interest on share capital and other sources	4,096,778	Sixth installment of resumption loan	616,000
			Miscellaneous	214,200
	Total	23,834,383	Total	22,889,559
			Balance	944,824

connect with the Kwangtung section at the border of Hunan Province. Starting these survey parties is further indication of a determination to push the railway enterprise

forward. (Consul General Geo. E. Anderson, Hongkong) a fuller technical report on this railway appeared in the December, 1911, issue of this paper).

PHILIPPINE RAILROADS

The somewhat belated Report of the Philippine Commission for the fiscal year ending June 1911, has just been received from Washington. The Governor General says:—

Railroad construction has progressed steadily during the year. The Philippine Railway Co. have in a large measure completed their work. The total mileage for which immediate construction is expected is now in operation and showing handsome increases. The line in Panay has shown its peculiar importance, as the country which it traverses was almost abandoned, but is now being planted with various crops, particularly sugar.

The Manila Railroad Co., operating on the island of Luzon exclusively, is rapidly pushing the construction of its southern branches. At the present writing the line has just reached the town of Batangas, the town of Tiaong in Tayabas, and almost to the town of Magdalena in La Laguna. The sections opened up have proved unexpectedly productive, and the business of the railroad has been immediate. The Province of Batangas shipped out 10,000 tons of oranges the first year that the railroad went in. The unguaranteed section of the line is being pushed rapidly to the north and is now in the town of Aringay. Surveys have progressed rapidly, and the railroad has found a satisfactory line at reasonable grade to the city of Baguio.

In the main, the railroad situation looks encouraging, and the stimulus given to industry and the additional activity and progress among the people benefited has justified the Government in the assistance which it has given in the matter of inducing the construction of railroads.

The total kilometerage of railway lines authorized by law, with the length constructed, to be constructed, and in operation on June 30, 1911, is shown below:

Road.	Authorized.	Constructed, in operation.	Constructed, not in operation.	To be constructed.
Manila R.R. Co.	*1,327.7	620.7	51.1	*655.9
Manila Electric R. R. & Light Co.	48.7	11.2		7.5
Manila Suburban Rys. Co.	19.9	9.9		10.0
Tarlac Ry. Co.	20.6	20.6		
Daet Tramway Co.	7.2	7.2		
Philippine Ry. Co.	268.6	211.9		156.7
Insular Coal Co.	12.0	12.0		

*Approximate.

MANILA RAILROAD COMPANY.

Construction.—During the year 89.6 kilometers of track were laid by this company, the average required to complete guaranteed lines under legislative concessions by September 12, 1918, being 90 kilometers annually.

Operation, northern lines.—On the northern lines 441.3 kilometers of main track were in operation on June 30, 1911. The results of operation for the calendar years 1909 and 1910 follow:

	1909	1910	Increase.
Average operated kilometerage for which operating results are shown	342.7	409.1	66.4
Revenue from transportation	2,035,025.75	2,452,730.21	417,704.46
Revenue from operation other than transportation	12,597.95	14,857.09	2,259.14
Operating expenses	900,779.79	1,072,974.47	172,194.68
Taxes	10,238.09	20,213.28	9,975.19
Operating income	1,136,605.82	1,401,397.85	264,792.03

Miscellaneous income, including income from separately operated properties, interest on securities, loans and accounts, etc., of which no report is obtainable for 1909, increased the operating income for the year 1910 to a gross total of P1,699,110.05.

The year 1910 was unusually free from severe storms, and but few interruptions to traffic were caused by washouts.

Operation, southern lines.—The average kilometerage operated during the year 1910 on the southern lines was 111.8, and the results of operation for the calendar year follow. No report is available for the previous year:

Revenue from transportation ..	P201,523.39
Revenue from operation other than transportation ..	346.34
Revenue from outside operations ..	658.54
Operating expenses ..	134,459.02
Taxes ..	1,574.74
Operating income ..	66,494.51

PHILIPPINE RAILWAY CO.

CONSTRUCTION.

Island of Cebu.—At the end of the fiscal year there were a few items of construction work unfinished, the majority of which were, under a ruling of the Governor General, required to be finished by August 1, 1911, two items running to October 1, 1911. No construction work has been done on the proposed line from Carcar across the island to Barili and Dumanjug.

Island of Panay.—During the year the construction forces have been engaged in completing the grade, ballasting, bridges, etc., and at the end of the year 11.4 kilometers of final ballasting remained to be done, together with the wharves at Iloilo, several water stations, and a number of miscellaneous items.

OPERATION.

Island of Cebu.—The results of operation for the fiscal years 1910 and 1911 over the 95.6 kilometers of line on Cebu follow:

	Fiscal year		Increase.
	1910	1911	
	P	P	P
Revenue from transportation	236,435.84	272,168.11	35,732.27
Revenue from operation other than transportation	1,320.56	13,606.93	12,286.37
Interest on bank balances		2,072.45	2,072.45
Operating expenses ..	197,415.26	198,150.65	735.39
Taxes		2,593.95	2,593.95
Net operating income ..	40,341.14	87,102.89	46,761.75

Island of Panay.—The line on this island from Iloilo to Capiz has been in construction operation since September 1, 1910, the average kilometerage under operation during the year being 110.2. In the following table the average operated kilometerage for the fiscal year 1910 is 74.55, and for the fiscal year 1911, 110.2.

	Fiscal year—		Increase.
	1910	1911	
	P	P	P
Total revenue	146,188.60	273,533.82	127,345.22
Operating expenses ..	111,180.43	151,420.35	40,239.92
Operating income	35,008.17	102,113.47	67,105.30

MANILA ELECTRIC RAILROAD & LIGHT CO.

	Fiscal year—		Increase.
	1910	1911	
	P	P	P
Kilometerage of lines in operation	63.2	64.7	1.5
Operating revenue	1,124,612.31	1,244,048.35	119,436.04
Operating expenses ..	606,211.34	641,839.86	35,628.52
Operating income	518,400.97	602,208.49	83,807.52

MANILA SUBURBAN RAILWAYS CO.

	Fiscal year—		Increase.
	1910	1911	
	P	P	P
Kilometerage of lines in operation	11.6	11.6	
Operating revenue	215,670.40	251,563.03	35,892.63
Operating expenses ..	123,441.22	116,348.18	*7,093.94
Operating income	92,229.18	135,214.85	42,985.67

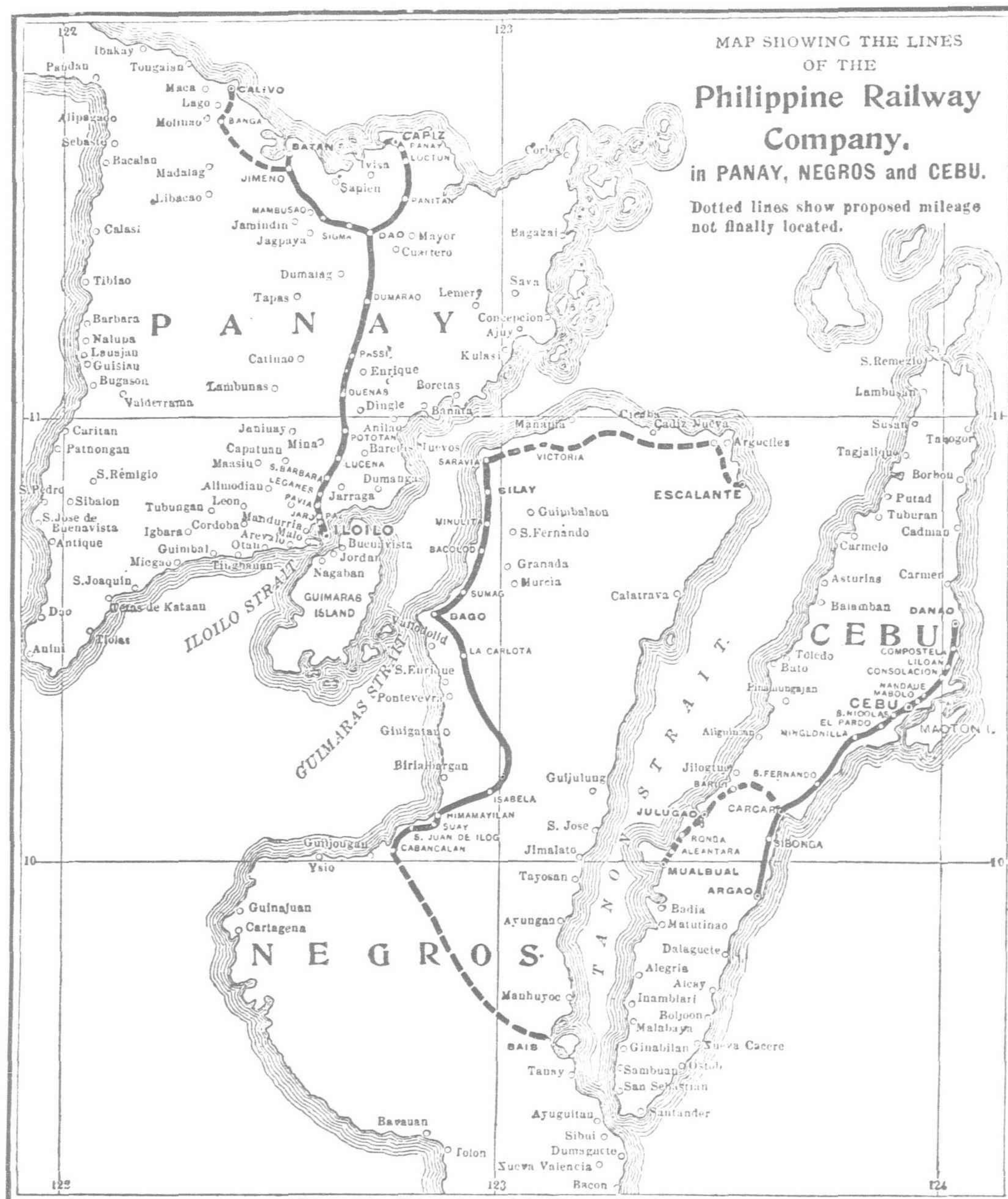
*Decrease.

DAET TRAMWAY CO.

The Daet Tramway Co., operating over 7.24 kilometers between Daet and Mercedes, in the Province of Ambos Camarines, reports a total revenue from passengers, freight, and mails of P17,369.19, with operating expenses, including maintenance and taxes, of P12,528.75, leaving an operating income for the year of P4,840.44. The equipment of this short line consisted of 4 passenger cars and 20 freight cars, operated by 22 bulls.

TARLAC RAILWAY CO.

The Tarlac Railway Co., operated entirely by the use of Manila Railroad Co. equipment, under contract with that company, between the towns of Paniqui and Camiling, a distance of



20.58 kilometers, in the Province of Tarlac, reports as follows on the results of operation during the fiscal year 1911:

Total revenue	P33,384.30
Operating expenses	15,886.12
Taxes	1,612.16
Operating income	15,886.12

THE MANILA RAILWAY COMPANY

GRATIFYING RECORD FOR 1911

A highly satisfactory record for the past year and well founded expectations of still greater success in the future were the chief features of the address delivered by Mr. C. Cater-Scott, Chairman of the Manila Railway Company (1906) Ltd., at the fifth annual general meeting of the company held in London on July 23.

The Chairman said that the accounts showed a distinct step forward. All debenture charges had been met out of revenue, nothing had been charged to capital, although such procedure was quite legitimate when a great deal of construction work was proceeding. There still remained a balance and from that they proposed to pay a dividend of one per cent on the Preference stock and to carry forward an

amount equivalent to three per cent on the Preference stock. The directors had adopted this conservative policy as they wished to avoid the possibility of a set-back, they did not want to declare a dividend of two per cent one year, and then perhaps go back to 1 per cent the next year.

THE RAILWAY RETURNS.

With regard to the railways, on groups 1 and 2 of 217 miles, consisting of the old Manila-Dagupan line, with the first extensions the old company built, on the same mileage as in 1910 the gross traffic had risen P355,000 to P2,633,000. The working expenses ratio was 41 per cent., as against 40 per cent., but in 1911 the rainfall had been extraordinary, with heavy floods and washouts. On these two groups the net revenue was P1,550,000 or P122,000 more than in 1910, and P404,000 more than in 1909, so that in two years the net revenue from these groups had increased by over £40,000, while the earnings per mile of road, which in 1909 were £528 and 1910 £658, in 1911 amounted to £714. In group 3, consisting of the extension from Dagupan to near San Fernando, with some small feeder branches, in 1910 there was a loss of P41,284 but last year the loss was reduced to P13,060 and in the current year he thought there would probably be some profit, because last year the expenses of working the group were increased, through the heavy washouts, by considerably more than the amount of the loss. Moreover, even if a feeder sometimes

did not actually pay its way, it benefited the main line. For instance, in connection with group 3, traffic amounting to P222,000 was brought to the main line in 1911, which was a fair *quid pro quo* for the small loss sustained on its operation. On the Southern system they operated an average of 72 miles in 1911, against 60 miles in 1910. The credit balance resulting was P409,000 or over £40,000, as against P67,410 or £6,700 in 1910. The earnings per mile of road had increased in the year from £112 to £568. The American Company (the Manila Railroad Company of New York) in 1911 earned not only all the interest on the Southern Guaranteed bonds, £23,000—so that there was no necessity to go to the Government for any portion of the guarantee—but they had a surplus of £13,000. They were able to meet the interest on the bonds held by the English company, to pay off £31,391 of accumulated arrears of interest, and to carry forward an undivided balance of £6,235.

BRITISH COMPANY'S POSITION.

The receipts of the British Company in the past year were £107,332, which, after paying London expenses, interest, &c., left a balance of £190,640, or, with the balance brought forward, £235,577. The payment of the full interest on the "A" and "B" bonds absorbed £155,200; the proposed 1 per cent. dividend on the preference shares would take £20,000, and £60,377 would remain to be carried forward. They could honestly congratulate themselves on these results, and could look forward to the future with considerable confidence. The Northern system, when completed, would be 370 miles, of which 295 miles were completed and in operation, 35 miles partially completed, and on 40 miles work had not yet been commenced. It would not be long before the construction of the Northern system was complete. In the south the total mileage was estimated at 470 miles, of which 158 miles were completed and in operation, 42 miles partially complete, and 270 miles had yet to be built. Altogether they had 453 miles complete, 48 miles partially complete, and 330 miles yet to be built, making a grand total of 840 miles. In the south they were building a line something like a herring-bone from what might be called the civilised part of the island to the south, and they hoped gradually to put out feeders, and eventually cover the entire island with a network of lines. This they believed would lead to great prosperity; but they must go slowly, husbanding their resources as much as they possibly could. From the "Merchant Association Review" of Manila, the chairman then read an extract showing that in this direction the railway was opening up a hitherto unsuspected volume of products which had gone ungathered for years through lack of transportation. Some of the shareholders were anxious that the northern system should be completed at once, but they must be guided by what the Government desired, and it was the wish of the Government that they should push on construction in the south with all speed. It was in the interests of the shareholders that the working capital should be employed in the first place where it would be most advantageous to the company in opening up the trade of the island and in affording facilities not only for the traffic which existed but for developing it more and more.

THE BAGUIO LINE

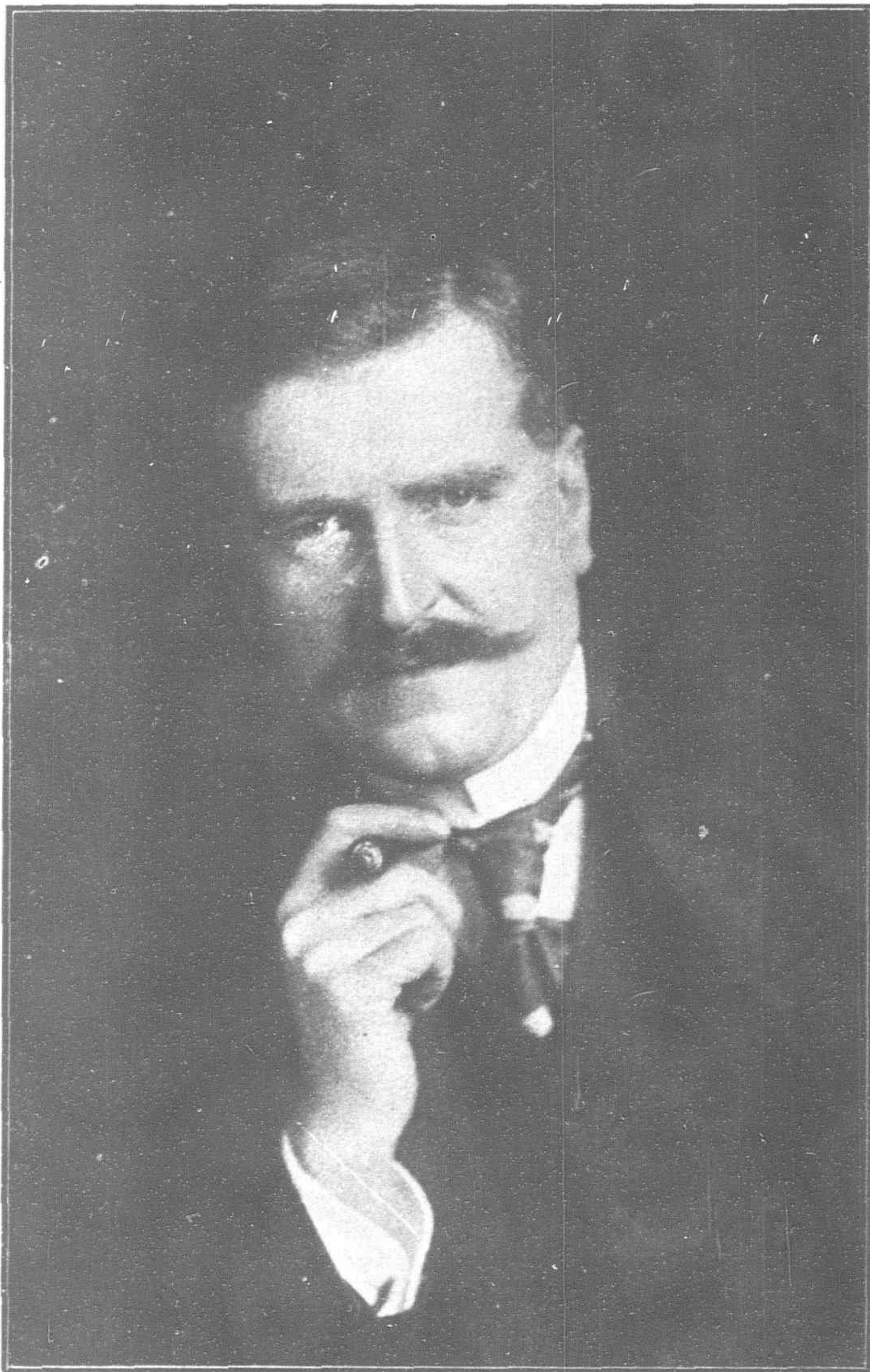
The Chairman continued that the Government had long been anxious for them to build a line to Baguio, "the Simla of the Philippines," but the company had found themselves unable to follow the route which had been chosen for the Government's own line. After a great deal of difficulty they had been able to find what looked like a suitable line to Baguio. He proceeded: The route we have selected is from Aringay, on the coast, and then for about 12 miles it goes to a place called Galiano, and from thence up to Baguio. We have adopted the system, which is very largely used in Switzerland and other mountainous places, called the rack railway. As our staff in the Philippine Islands had no experience of rack railways, and in order to prevent any

misfortune or undue cost, we arranged with Mr. Spinnler, who is a Swiss railway expert and who has had charge of a good many mountain railways, to go out and report. Well, Mr. Spinnler has gone out and he has reported. He approves of the location we have selected for the railway, and I think we shall be able to secure his services to see that it is built thoroughly in accordance with the best and most up-to-date rack railway system. I do not think that next year we shall be able to report that the line is finished, but in two years' time I, myself, or whoever then is in the chair, will be able to tell you that the road is through to Baguio, that we have the line working satisfactorily, and that we have been able to do everything to meet the wishes of the Government of the Philippines. And here I should like to say that we do feel we owe the Philippine Government a great deal for the way they have consistently endeavoured to help forward all our railway construction. Only one more word in conclusion, for I am sure you would like to know what progress we have made this year with construction. Well, from January 1 to July 18 we opened for traffic practically 28 miles. Of course, there is a great deal more work done, and before the end of the year we shall quite fulfil our contract with the Government. I now beg to move that the report and accounts be adopted.

Admiral Sir Cyprian A. G. Bridge seconded the resolution.

COMPLETION OF CONSTRUCTION

In reply to a question the Chairman said that the company had never owned the Paniqui-Camiling line; it had operated it for the owners taking a certain portion of the receipts but when it was found not to be good enough to continue the arrangement it was terminated. The company had a contract with the Philippine Commission to finish the construction work by the year 1918. So far, they were completely fulfilling their construction liabilities, and he saw no reason to fear that they would not be able to do so in the future. He would not like to prophesy as to what the receipts from their lines would be this year; for they had another six months to run before the year ended. However, the total earnings on the old part of the line—the 217 miles—and on the new system (group 3) and on the southern lines (group 4), had amounted to £262,000, as against £220,000 gross last year. With those figures before him he did not anticipate that they would do worse than they did last year, but he would not like to say how much better they might do. As he pointed out last year, the object of the board was to build up the undertaking to a position of a steady dividend-paying concern, and this was a policy which he considered to be in the best interests of the shareholders. As he had already pointed out, they did not want



HORACE L. HIGGINS,
PRESIDENT AND GENERAL MANAGER,
MANILA RAILWAY CO., LTD.

to pay a dividend of $2\frac{1}{2}$ per cent. or 3 per cent. one year and then another year have to revert to the payment of 1 per cent. As he had also pointed out, they had big construction liability; they had certain parts of the road to build which might not prove to be as profitable as some other portions, and it was therefore necessary that the directors should proceed very carefully indeed. Not only had the directors considered the possibility of using water power, but Mr. Higgins had also considered the advisability of using electricity as motive power, though up to the present time nothing had been done.

The resolution was put to the meeting and carried unanimously.

The resolution declaring the dividend of one per cent on the preference stock was agreed to.

New Railway Bridge, India:—The Northwestern Railway bridge over the Malir River, some 12 miles from Karachi, is stated to have been condemned as unsafe. The Government is asked to sanction an expenditure of \$455,000 for a new bridge capable of bearing a double track.

The Malir in the dry season contains no water, but on some occasions has a depth of 30 feet and a width of nearly 1 mile. The bridge at this point has been badly damaged by floods repeatedly, and on two occasions was practically rebuilt. The construction has been authorized and the work will be carried out under the supervision of the District Engineer of the Northwestern Railway, (Mr. A. P. Walsh) whose office is at Karachi.

THE TIENTSIN-PUKOW RAILWAY

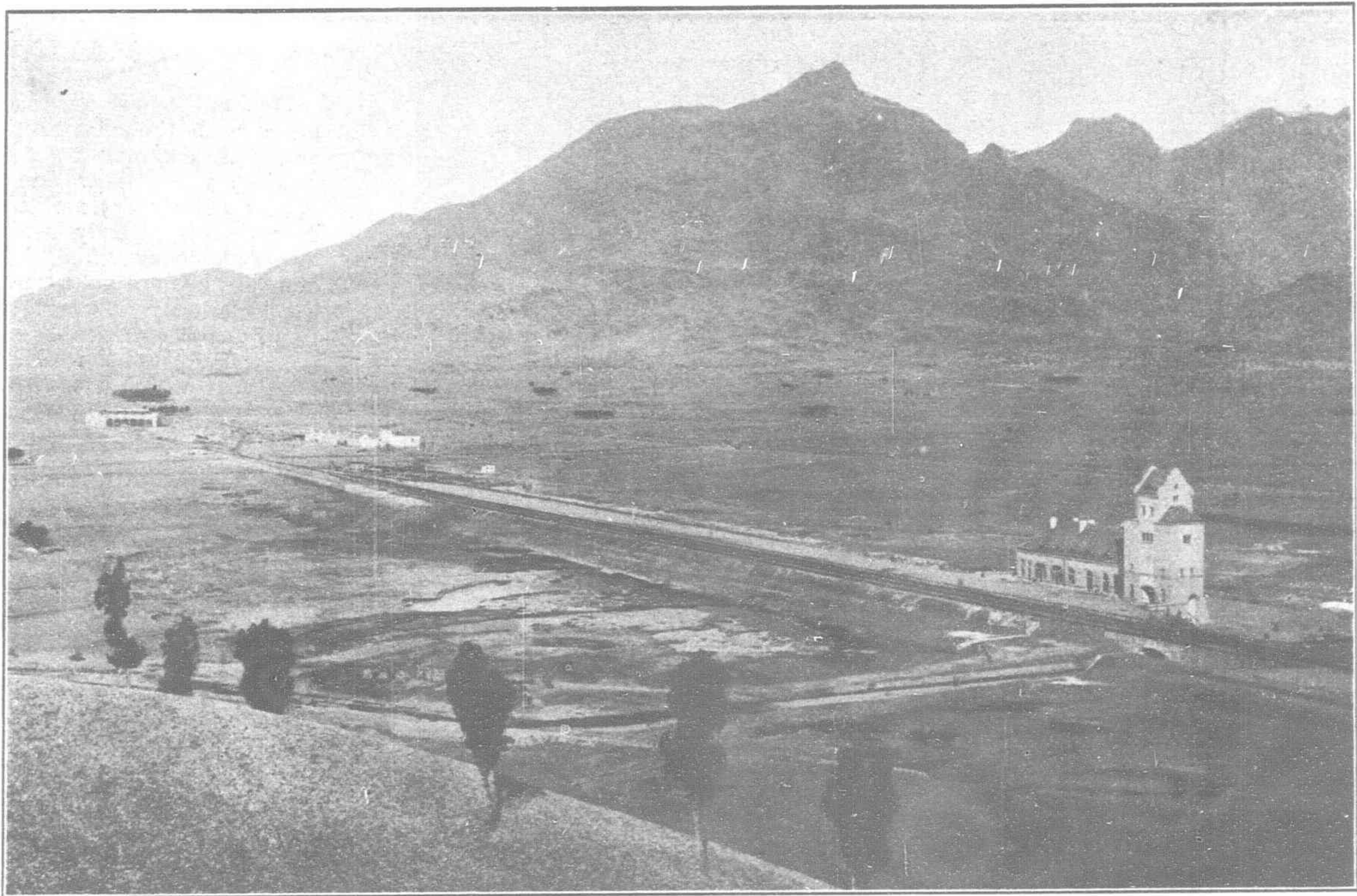
During the past year such progress has been made with the construction of the trunk line which is destined to connect Shanghai and Peking, via Pukow (on the Yangtsze River opposite Nanking) and Tientsin, that a service of trains is already available for passengers. Through connection between Pukow and Tientsin has not yet been made, the bridge over the Yellow River, near Tsinanfu, the capital of Shantung Province, being still uncompleted. The photographs which we publish on this page, and which were specially taken for the FAR EASTERN REVIEW illustrate the stage of construction reached on August 28 last. The approaches have already been completed and the central span, which is in course of building, is all that remains to be finished in order to effectively link Pukow with Peking, and, in fact, the extreme limits of all lines radiating from the Capital or its next door neighbor Tientsin.

It is hoped that by October or November the Yellow River bridge will be open for traffic, and then it may be said that through railway communication can be had between Shanghai, the metropolis of China on the Asiatic littoral, and Calais on the English Channel, or any large European port for that matter washed by the North Sea, the Atlantic, or the Mediterranean, the only break of rails of consequence being that at the Yangtsze River between Nanking and Pukow. There a passenger ferry will do service for some time, but the day will come when the cars despatched from Shanghai may be transported over on a modern train ferry, and, if it is so desired, be run to the limits of China if no further. Even now passengers may traverse the whole distance from Shanghai to Europe overland, the only objection to the journey just at the moment being the compulsory delays of one night each at Nanking, Hsuehufu, and Tsinanfu, before Tientsin can be reached.

As is no doubt known to readers the line between Pukow in the south and Tientsin, in the north, is a stretch of miles connecting for through traffic the short lines which have for some time been open between Shanghai and Nanking (miles) on the one hand, and Tientsin and Peking (miles) on the other. The southern section of the main stretch that between Pukow and Hanchwang, on the Shantung border, and hard by the historic Grand Canal (which waterway, it may be parenthetically remarked also stretches from the Yangtsze, and from even further south in Chekiang Province, to Tientsin, connecting with Peking), was built with British capital and engineers, whilst the northern section from Hanchwang to Tientsin is the product of German capital and engineers, the former section being miles in length whilst the latter is

The present article in no sense aims at being a technical description of the line. That will be published later. It is merely a cursory report of the present progress of the work, embracing a little general information for the benefit of those desirous of knowing what travelling facilities at present exist. To accomplish that object in the easiest manner we will conduct the passenger northwards from Shanghai. Thus we embark upon the

First Stage. Leaving Shanghai on the well appointed and conducted limited express of the Shanghai-Nanking Railway at 1.5 p.m., after having purchased either a first class ticket for \$, a 2nd class one for \$, or a 3rd class one for \$, as best suits the taste or the pocket, the traveller is borne through entrancingly interesting and intensely cultivated country until Nanking is reached at p.m. The Bridge House Hotel, newly renovated and well conducted, will afford dinner, accommodation for the night and early breakfast at reasonable rates and will see to it that baggage is aboard the launch which leaves at 6.30 a.m. next morning to cross the river for Pukow—and in this apparently trifling matter it behoves the traveller to follow the example of his baggage for if he misses the launch he will be compelled to cross the river by sampan and perhaps miss his train, although it does not leave the other side of the river



TIENTSIN-PUKOW RAILWAY, NORTHERN SECTION; THE STATION AT TAINFU.
TAISHAN, THE SACRED MOUNTAIN IN THE BACK GROUND

until 7.30. Here, in the dark of a chilly morning, the passenger may feel disposed to wonder why on earth he should be compelled to leave Nanking at 6.30 a.m. on a ten minutes' launch journey to catch a train departing at 7.30. This deponeth sayeth not, but surmises it is one of those little anomalies which seem to be contrived the world over for the mental delectation of the critical tourist. But it is so, and whilst wondering we enter upon the

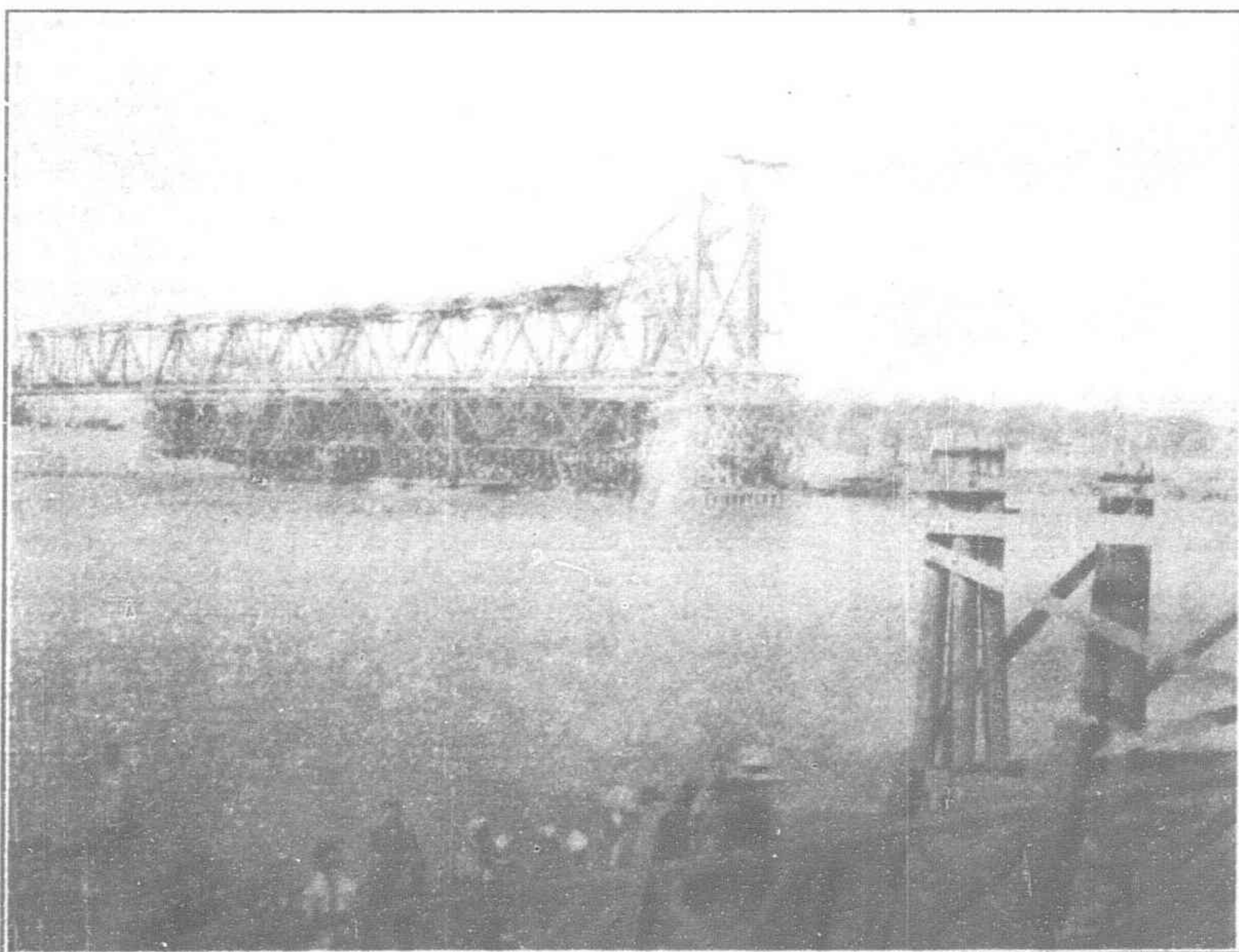
Second Stage. With the arrival of the launch on the northern bank of the great turgid stream Pukow becomes alive with coolies hustling and jostling and exhibiting Sandow strength in the apparent endeavor to rend the baggage into infinitesimal fragments. They crave, one would think, the distinction of carrying it to the train standing at the platform a few hundred yards away, but the proud innocent may be disabused for they need the money. The Pukow coolie like unto more erudite men of different hue has learnt the bitter lesson that distinction is not convertible

into any know currency of any realm sufficiently magnetic to attract rice from the keeper of the stores. But having suppressed the clamant demand by paying far in excess of the value of the service rendered, and having purchased at a galvanised iron shed (for the station is not yet built) a first class ticket for Hsuehowfu, some 211 miles to the north, for \$12.65, a 2nd class one for \$8.50, or a 3rd class one for \$4.00 the traveller may board a substantial first, second, or third class car and make himself comfortable for a journey lasting till the sun sets.

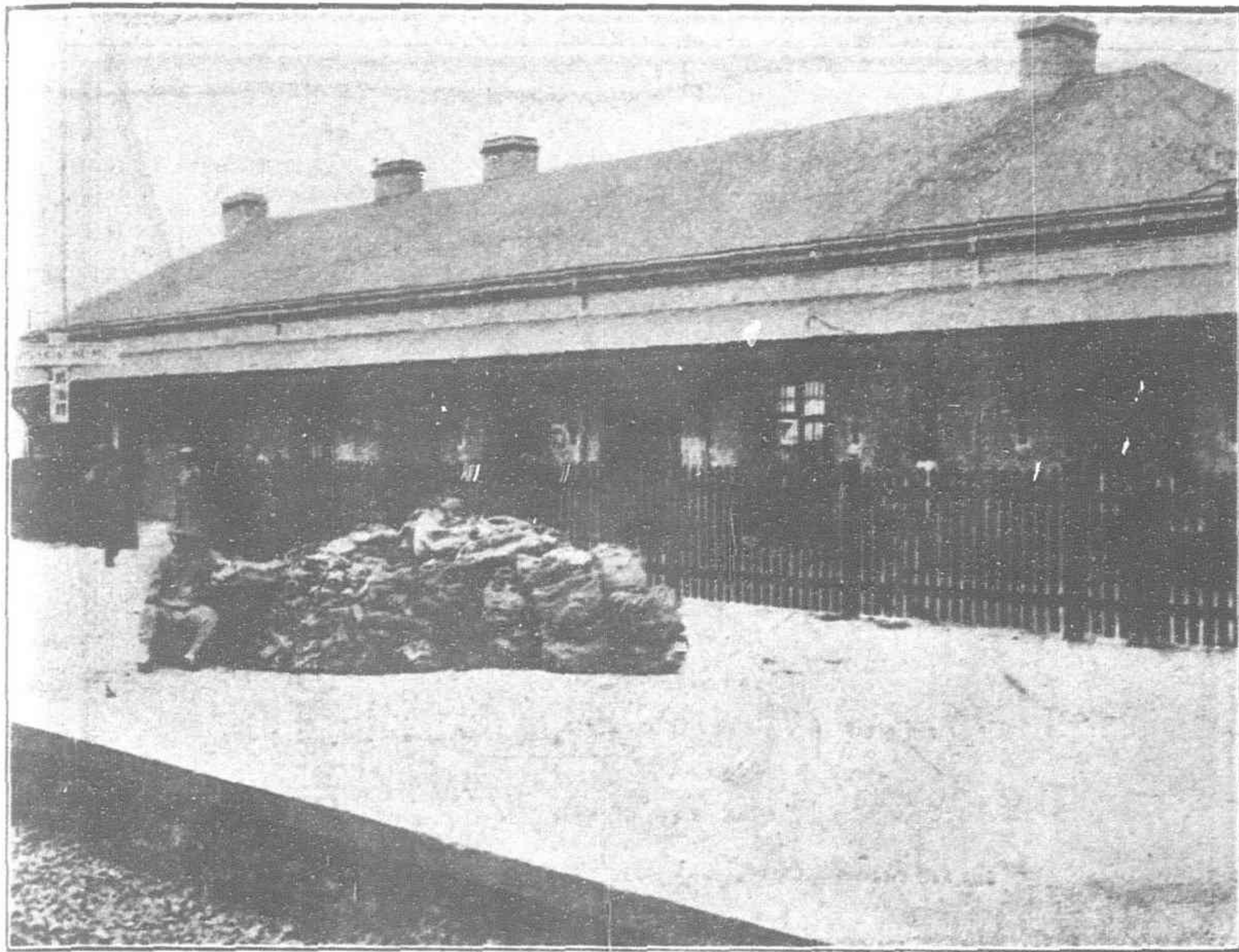
It may be here intimated for the information of the stranger that the second and third class accommodation is mostly used by the Chinese, but the second class seats can be made endurable by the use of a cushion or a folded rug. The first-class car, divided into coupés and a wide-windowed easy-chaired smoking saloon, is all that one could desire for the distance or the money, and an additional attraction is attached to it in the shape of an

up-to-date dining car, whereon excellent food is served at the modest price of \$1 for a meal of several courses, the menu at the same time intimating that one bottle of aerated water is given gratis with each meal!

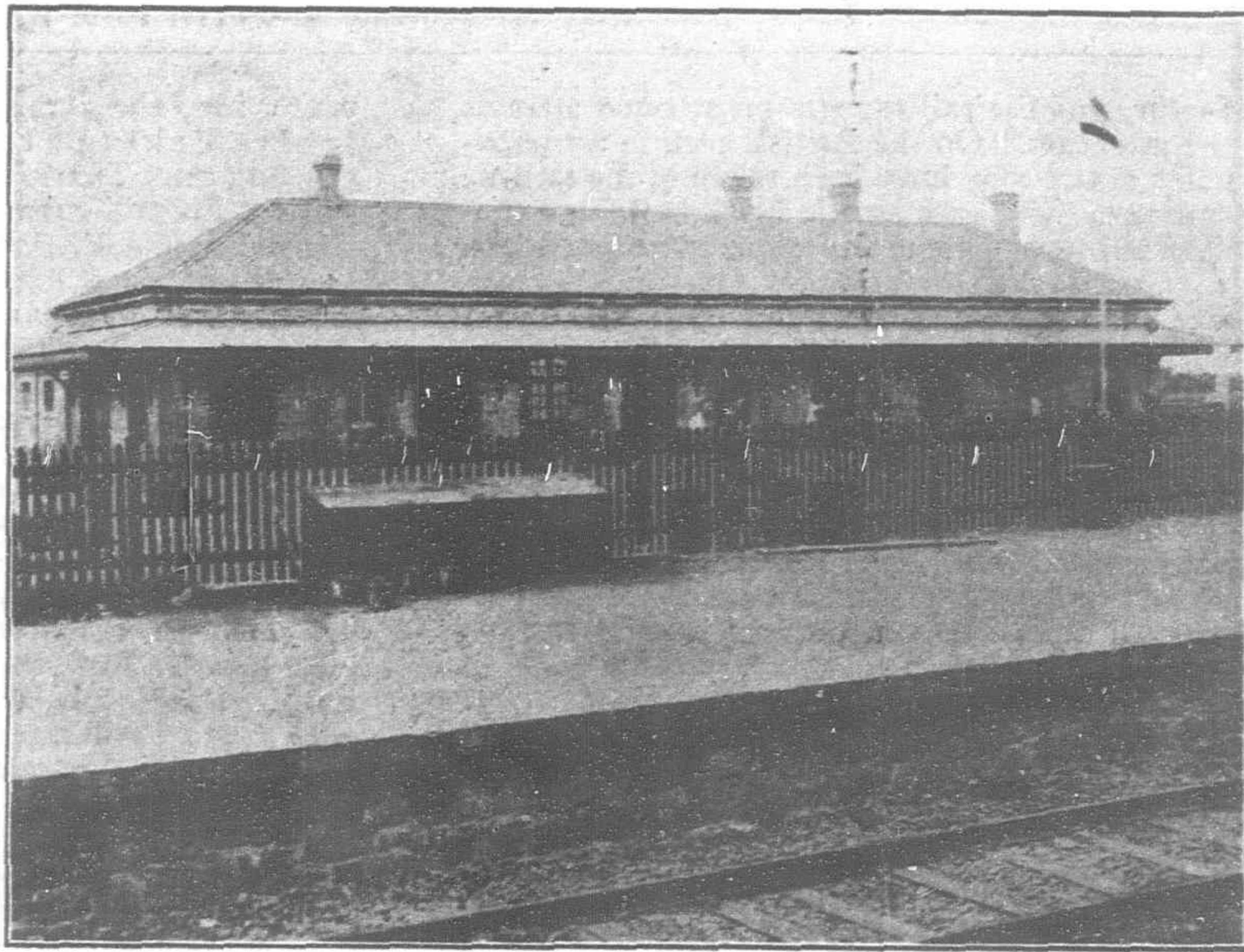
Before the traveller can make up his mind what kind of free liquid he will indulge in at his breakfast he is whirled past the well laid out work shops on the left, some distance from the station, and is carried through a cluster of low hills and undulating ground to the great plains stretching away into Shantung—cultivated to the last available inch, every mile of it. In August it was all aglow with green beans, millet, or sepia-crested kaoliang, with the monotony of still life being constantly broken by the interjection into the scheme of things of the ubiquitous donkey, or donkey cum bullock, or bullock cum two donkeys, or vice versa, at the plough or harrow. And in the midst of a Pickwickian rumination upon the strange mutability of human affairs that places the traveller in the train and the



TIENTSIN-PUKOW RAILWAY; THE YELLOW RIVER BRIDGE, SHOWING PROGRESS OF CONSTRUCTION
MAY 1912 AUGUST 28, 1912



STATION AT LIU HUAI KUAN



STATION AT PENG-PU

TIENTSIN-PUKOW RAILWAY. BRITISH OR SOUTHERN SECTION

sun-burned Chinaman, who used to hate the train, at the everlasting plough, a force armed with formidable rifles enters the car and makes demands of the passengers. One is prone to think that the days of Deadwood Dick, the famous hero of the Black Hills, have come to China, but it is not so. It is merely the collector of tickets and part of the train guard. We are still in the days of insecurity.

Gradually the train fares into the north through areas known for conflicts in the recent Revolution between the retreating soldiers of the Imperialists under Chang Chun and the Revolutionists. At Ling Huai Kwan station, near the Hwai River, notorious for its disastrous floods, still stand two four point seven guns as mementoes of the strife, whilst others still remain at Hsu Chow-fu. Shortly after passing Peng-up station the Hwai River is crossed, and here the largest bridge, though not the longest, on the line is crossed. It is of steel and is 1,876 feet in length there being nine spans of 200 feet each. The country in this vicinity is flat alluvial and the crops are not good. The land is too subject to inundation to permit of good returns, but the industrious Chinese plough and sow, and risk the result. This year they will get returns, but the Hwai River has not been obstreperous.

Hsu Chow-fu is reached somewhere between seven and eight o'clock, and here the change is made to the cars of the German section. The train from Tsinanfu, in the north, arrives a little earlier than the southern train and the passenger bound northwards leaves the train upon which he has travelled, after taking



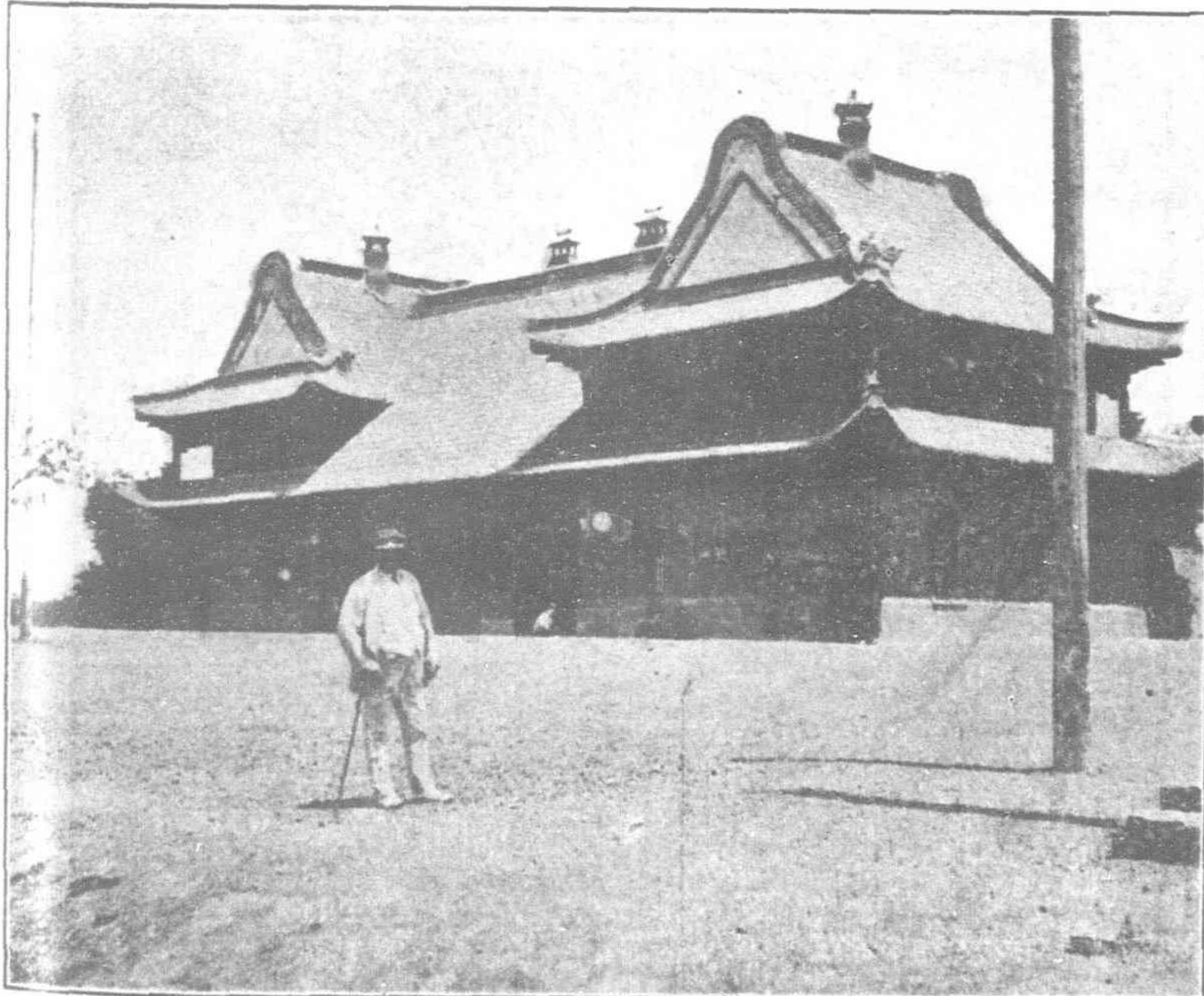
THE HWAI RIVER BRIDGE, ON SOUTHERN
TIENTSIN-PUKOW RAILWAY (1,876 FEET IN
LENGTH—9 SPANS OF 200 FEET)

dinner, of course, and boards the German train, where he sleeps the night. The first class cars of the German section are convertible into sleepers and so are as comfortable as could be wished. The next morning the traveller enters upon the

Third Stage.—At 7 a.m. the train starts upon its 200 mile journey for Tsinan-fu, the fares being \$12.30, first class; \$8.20, 2nd class and \$4.10 3rd class. The cars are comfortable, though there is no dining car attached, the meals being cooked in what is called a kitchen and served in the coupés, though this method is awkward if there are several passengers, since there is but sufficient table space to accommodate the necessary gastronomical equipment for one person.

The valley in which the station stands was once the bed of the Yellow River. That great stream once rolled down between the hills, but now there is nothing but cultivation, and the erstwhile rush of waters would probably have been forgotten by now were it not that the great dykes of old still stand as reminders of the other time when China's Sorrow heeded their restraining influence.

About an hour after starting out the Grand Canal is crossed by the traveller for a second time, the first crossing being just prior to arrival at Chinkiang, on the Shanghai-Nanking Railway. Near Hanchwang it is a narrow and apparently well-kept waterway, emerging from a great lake along which the line skirts for some mile, and which stretches away west as far as the eye can reach. At Hanchwang the train is in Shantung and the architectural



TYPICAL STATION BUILDINGS ON THE GERMAN SECTION OF THE TIENTSIN-PUKOW RAILWAY

features of the railway station at once attracts the attention. On the British section no particular notice may have been taken of the railway stations. They are simple brick buildings constructed to one general design, corrugated iron roof and unostentatious. On the German section the eye is attracted by a variety of design and a show of architectural adornment that is striking and lavish. The buildings are variously of stone or brick with red tiled roofs, and the scheme of design at each individual station is carried through even to the water tower and the pointsmen's huts. It is all picturesque, and the German section will stand unique in China at least for its display of talent in the designs of the railway stations.

The country traversed gradually improves from the agricultural point of view, and is all heavily cultivated, though the crops vary in condition. Nearing Tsinanfu the famous sacred mountain of Taishan is passed, and the formation of the country changes till Tsinanfu is passed. Great limestone quarries tend to make little of a miniature mountain near Tsinanfu, and passing these the capital of Shantung is reached before dark. A new station is here being built, and the railway is equipped with large yards and an abundance of space for sidings, all of which has been made the most of. Coolies from the Hotel Trendle wait on the station and the visitor can obtain excellent food and sleeping accommodation at this hostelry. The following morning he must be abroad early to catch the train for Tientsin, and here commences the

Fourth Stage.—The train for Tientsin leaves at 7.30, and the fares for the journey only vary in the matter of a few cents from those charged for the other stages. In the matter of a quarter of an hour the train arrives at the south bank of the Yellow River, and here passenger and baggage must disembark to cross the river. It must be noticed that the railway company decline to take any responsibility for passengers or their baggage in the crossing of the stream. Coolies shoulder the baggage and the passenger walks a few hundred yards to where a launch with barges is waiting. Upstream the great bridge is slowly but surely being thrown across the river and presents an imposing spectacle. The river runs strongly at this point and the launch needs all its steam to keep the laden barge beyond the power of the current. The bridge takes up all the attention of the passenger, however, and whilst he is studying it the launch completes the journey. The bridge when completed will be 4,050 feet in length and comprises nine spans of 91.5 metres each, two of 128 metres each and one, the central, of 164 metres. It is an imposing structure, and has, so far as the piers are concerned, been difficult to build. It was impossible for the engineers to find a solid bottom, and after going down some depth they were compelled to drive piles and upon those place the concrete foundations. They estimate that the silt at the bottom of the river to a depth of from two to three feet is constantly moving with the stream, so strong is the flow of water.

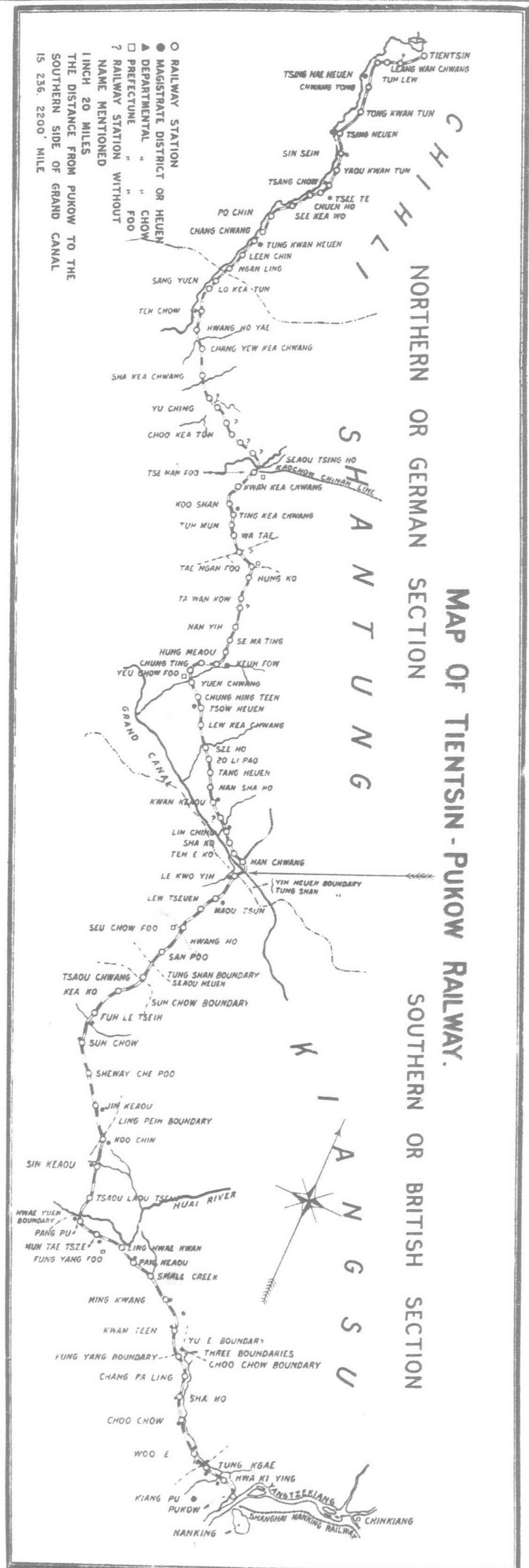
Whilst this bridge is more imposing than the one crossing the same river on the line from Hankow to Peking it is not so long, that bridge being some 9888 feet in length, consisting of 103 spans of 30 metres each. Workmen are busily hastening the junction of the central span of the new bridge and it is expected that the last rivet will be driven some time in October or early November. Meantime travellers will be compelled to use the ferry across the stream and suffer the inconvenience of changing.

The train from the northern bank starts for Tientsin about 9 o'clock, and passes through continuous cultivation. Kaoliang fields stretch away to the horizon in some places, and in all cases the land is under crop to the hills and even half way up them. The terminal station of this line is named Tientsin Central, but if the train is on time the passenger will do well to cross the line and

wait for the train from Peking to go to the Tientsin station. From Tientsin Central to the British Concession is a long and tedious rickshaw journey. According to time table the train is due at Tientsin Central at 6.59 p.m. and that gives ample opportunity to transfer baggage and connect with the train for Tientsin, the first class fare for the extra length being fifty cents. All rates given in this article are, of course, Mexican, the local currency. If the traveller is bound for Peking he will catch the train leaving the next morning at 8.10, the first class fare being \$5.20, and thus he enters upon the

Fifth Stage.—Continuing through country still under the plough, with fruit trees relieving the erstwhile monotony of cereal growth, the famed walls of Peking rise to view about 10.50 and skirting beneath the shadow of these grim enclosures of inspiring historic memorials he reaches the station near the Water Gate at 11. Another train leaves Tientsin at 3.45 p.m. and reaches Peking at 6.55 p.m.

Under the conditions herein described the journey by train from Shanghai to Tientsin is but little faster than by steamer, but when the Yellow River Bridge is completed it is the intention of the authorities to put on a service of through trains which will travel by night and thus reduce the journey to some 36 hours, making the route the shortest available from Shanghai to Peking. With the establishment of regular through trains this line is bound to develop enormously, and concurrent with that development will come the rise of the river port of Pukow. Capable of berthing deep sea steamers at its wharves it is, in the natural order of things, certain that eventually it will become a shipping port of note, and already plans have been devised for equipping it with the means to handle inward and outward cargoes of bulk. But that is another story.



CHOSSEN (KOREAN) RAILWAYS

RAILWAY TRAFFIC.

The total length of the railway line open for traffic, passenger or freight, was 674.6 miles in the fiscal year 1910, showing an increase of 34.1 miles, as compared with the preceding fiscal year. This increase was principally due to the opening of the *Heijo-Chinnampo* line in the same fiscal year. On examining the

results of operating, the train mileage is found to have been 2,102,122 miles and the total traffic receipts to have been 5,018,331 *yen*, showing an increase, respectively, of 180,885 miles and of 873,274 *yen*. Transportation traffic conducted during the fiscal year 1910, as compared with the preceding fiscal year, can be seen in the appended table:—

Description	1910—1	1909—10	Increase (+) or Decrease (—)
Length of Lines open to Traffic. (average) ..	^{mile} 674.6	^{mile} 640.5	+ ^{mile} 34.1
Total Train Mileage	2,102,122	1,921,237	+ 180,885
Total Number of Passengers	^{men} 2,024,490	^{men} 1,930,442	+ ^{men} 94,048
Total Amount of Goods	^{kin} 9,057,591	^{kin} 8,044,876	+ ^{kin} 1,012,715
Total Amount of Freight	^{ton} 888,723	^{ton} 712,137	+ ^{ton} 176,586
Total Receipts from Fares	^{yen} 2,643,452	^{yen} 2,302,063	+ ^{yen} 341,389
Total Receipts from Freight	2,404,879	1,842,994	+ 561,885
Total	5,018,331	4,145,057	+ 873,274
Average Receipts from Fares.....	^{yen} 0.88	^{yen} 0.05	+ ^{yen} 0.83
Average Receipts from Freight.....	0.23	7.33	+ 1.90
Total Average Receipts	19.06	16.33	+ 2.73

As shown in the above table, a better result was obtained in every respect. Though several obstacles were caused by floods on the *Masampo* branch line in the summer season and by an epidemic on the *Keijo-Shingishu* line—cholera breaking out in *Heijo* and its vicinity and pest in Manchuria—, yet the general railway traffic in the Peninsula has largely increased, owing to the fact that public peace being more firmly established after Annexation, better opportunities of safe travel were afforded, as well as larger shipment of agricultural products, the latter being very marked in the year 1910 owing to a good harvest.

The general account of the railway traffic for the fiscal year 1910, compared with that of the preceding fiscal year, shows much better results as may be seen in the following table:—

Items	1910—11	1909—10	Increase (+) or Decrease (—)	
			Amount	Percentage
Receipts from Traffic	^{yen} 5,018,331	^{yen} 4,145,057	+ ^{yen} 873,274	+ 21.1
Receipts from miscellaneous sources	124,115	99,147	+ 24,968	+ 25.2
Total Receipts	5,142,446	4,244,204	+ 898,242	+ 21.2
Expenses	4,804,066	4,201,206	+ 599,860	+ 14.3
Profits	338,380	39,998	+ 298,382	+ 746.0

The total receipts from the railways for the fiscal year 1910 reached 5,142,446 *yen*, being an increase of 898,242, or 21.2 per cent, as compared with the figures for the preceding fiscal year, while the total expense of operating the railways, including the expenses of the Railway Bureau, amounted to 4,804,066 *yen*, being an increase of 599,860 *yen* or 14.3 per cent. Thus the railways' net earnings amounted to 338,380 *yen* for the fiscal year 1910 against 39,998 *yen* for the preceding fiscal year (1909), whereas a deficit had been shown in each of two fiscal years of 1908 and 1907. In such circumstances the railways in the Peninsula are now gaining financial stability. As to the capital account of the railways, about 6,255,000 *yen* was the increase for 1910. Adding the amount to the capital transferred from preceding years, the total capital reached 95,836,072 *yen*, of which 94,502,700 *yen* was fixed, the balance belonging to the account for the purchase of materials.

In April 1910, an association affording protection or relief to those suffering from sickness, injury or losing their employment was first organized by the railway employees. Its membership reached 4,040 by the end of the fiscal year 1910, and its funds, including a government grant, fees collected from members and interest on deposits, aggregated 58,268 *yen*, 15,156 *yen* out of this fund was paid out to 719 members who fell under the above categories.

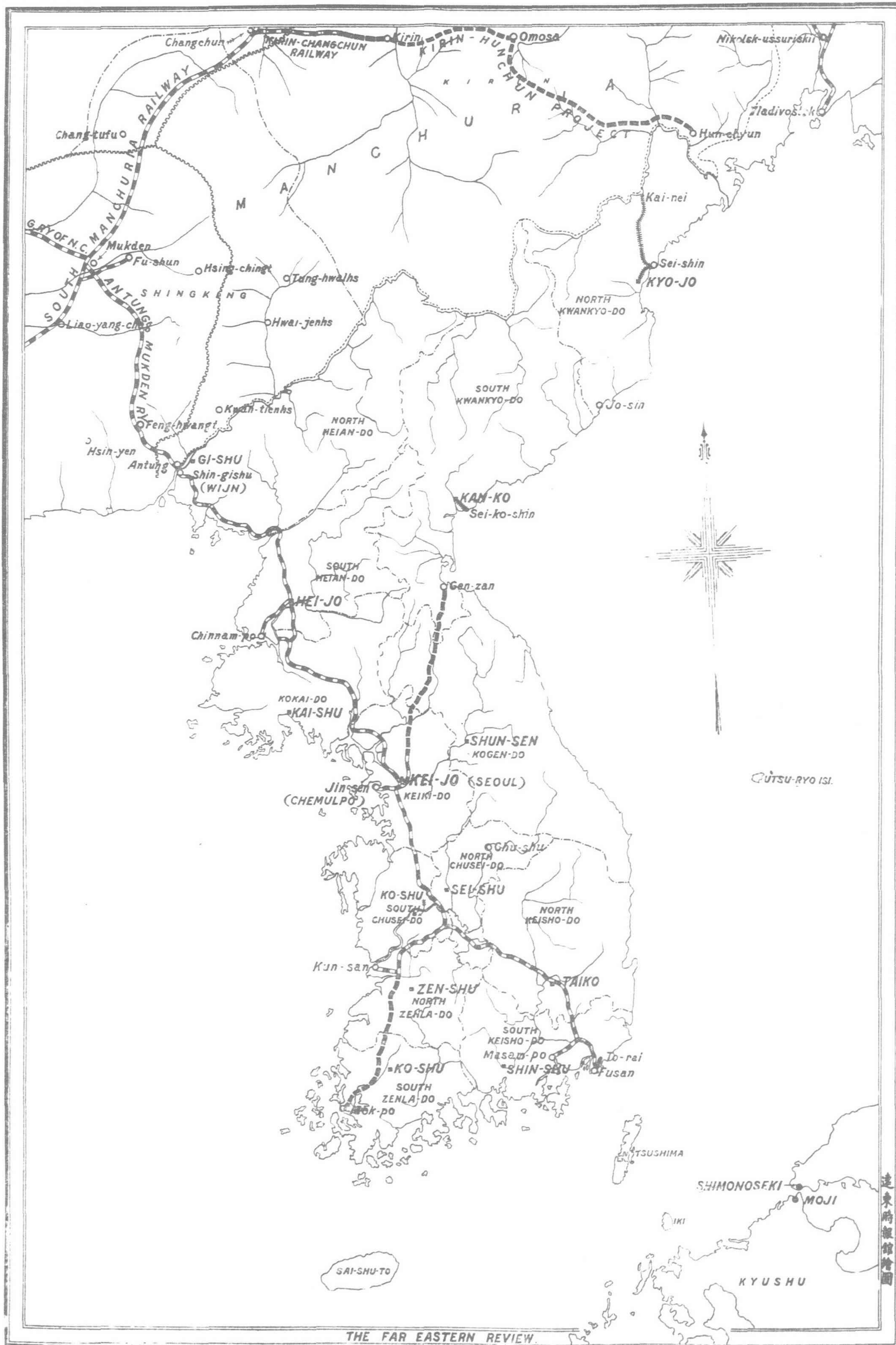
Regarding accidents on the railways during the fiscal year 1910, the train service on the *Masampo* line was interrupted for 15 days owing to floods which took place several times in the summer season. As to other accidents, numbering 827, the cars were derailed 52 times, there were 5 collisions, 3 over-turnings, 30 cases of damage done to rails by natural calamities or by individuals, 151 to trains, 11 by fire, and so on. In addition, there were 81 deaths and 61 cases of injury from accidents among railway employees during the fiscal year 1910.

RAILWAY CONSTRUCTION

With regard to railway construction in the Peninsula, work on a railway between *Heijo* (*Pyeong-yang*) and *Chinnampo*, which was commenced in August 1909, being completed in 1910, the railway traffic on this line, a distance of 34 miles 46 chains, was commenced in October 1910. This railway was hastily constructed, improvements of sharp curves and temporary bridges being deferred for gradual consummation. The building of permanent iron bridges had been already commenced in 1910. The construction of two railways—the *Taiden-Mokpo* line with a branch to *Kunsan*, and the *Keijo-Gensan* line—planned to be carried out in 11 years beginning from the fiscal year 1910, was passed in the 26th session of the Imperial Diet. The former line, starting at the port of *Mokpo*, is to connect with the *Fusan-Keijo* line at *Taiden* station via *Lashu*, having a branch to the port of *Mokpo*. The total length of this railway is 174.5 miles, the total outlay required being estimated at 12,824,354 *yen* with an addition for rolling stock amounting to 2,175,646 *yen*. As to the other railway, the line starting from the port of *Gensan*, is to connect with the *Fusan-Keijo* line at *Ryusan*, a suburb of *Keijo*, via *Giseifu*, *Tetsugen* and *Heiko*. The total length of this trunk line is estimated at 136.3 miles, and the construction is also to be commenced in the beginning of the fiscal year 1910, the total expense required for the construction of the *Gensan-Keijo* railway being estimated at 14,330,698 *yen*, besides 2,044,500 *yen* for rolling stock. But the conditions existing in the Peninsula requiring hasty completion of the transport facilities, the above mentioned plan was modified so as to be carried out in 5 consecutive years, beginning from the fiscal year 1910, instead of 11 years, and the modified plan was passed in the 27th session of the Imperial Diet in 1911.

As to improvements of railway tracks, the work on the *Keijo-Fusan* line was completed by the end of the fiscal year 1910. In the *Keijo-Shingishu* line, improvement work extending to 44.1 miles, was completed during the fiscal year 1910, 270.3 miles being finished by the end of the same fiscal year in the total length, and the remaining 38.9 miles is expected at the same time as the railway bridge on the *Oryoku* river, namely, before the Imperial Birth-day of the following year (November 3, 1911).

The building of a steel bridge over the *Oryoku* river was commenced on August 1, 1909. The total length of this bridge will be 3,108 feet, consisting of 12 spans of 200 or 300 feet each. A span of 300 feet in the middle part of the bridge is to be capable of being opened to permit the passage of ships. 2,000,000 *yen* was estimated as the cost of building this bridge, and its completion is expected by the



Lines Open
„ Under Construction
Light Railways

OFFICIAL MAP OF KOREAN RAILWAYS, 1912

time when the *Keijo-Shingishu* line is connected with the *Antung-Mukden* line in Manchuria, during the fiscal year 1911.

STREET-CAR AND LIGHT-WEIGHT RAILWAYS.

Matters concerning street car and light-weight railways were originally supervised by the Home Department of the late Korean Government and the former Japanese Residencies, but in the sequel of Annexation their supervision was transferred to the Railway Bureau attached to the Government-General. Hitherto no regulations concerning street-cars and light-weight railways being provided, the general principles contained in the regulations enforced in Japan proper are observed, under the control and supervision of the Government-General.

A concession for constructing a street railway in *Keijo* (*Seoul*) was first given to the Electric Joint Stock Company by the late Korean Government in January 1898, which concession being transferred to the Korean-American Electric Street Car Company in 1904, the line was built by the latter. This street railway, however, was sold, in August 1909, to the Japanese-Korean Gas Company for 1,700,000 yen, and since its transfer to this Japanese Company, many improvements were made by laying better rails, building extensions and making double tracks—all of which amounted practically to reconstruction. The total length of this street railway reached 16.3 miles at the end of 1910. In *Heijo* (*Pyeong-yang*), a street-car line operated by hand was built from the railway station to the native town via the Japanese town in 1906. As to light-weight railways in Korea, a

line running between *Fusan-chin*, a suburb of the port of *Fusan*, and *Torai*, a hot-spring resort, was built with a total length of 6.23 miles by the *Fusan Light-Weight Railway Corporation*, and being bought, on February 2, by the Korean Gas and Electric Company, which was organized by the Japanese, is now maintained by the Company. In addition there are still two more light railways operated by hand power: one running between the ports of *Seishin* and

Kainei via Ranan in North *Kwankyo* province, and the other between *Kanko* and *Seikoshin* in South *Kwankyo* province. Both of them were built by the Japanese Army during the war with Russia for army transport. After the war, these light railways became carriers of goods for the general public. The following table shows the general features of the electric car and light-weight railways existing at the end of December 1910:—

Description	Length of Rail	Size of Gage	Motive Power	No. of Passengers	Amount of Freight	Receipts from Traffic	Operating Expense	Net Profit
Electric Street Car in <i>Keijo</i>	12.88	3.06	Electric power	3,212,387	3,797	167,954	110,946	57,008
Light Railway between <i>Fusan</i> and <i>Torai</i>	6.23	2.00	Steam power	25,164	240	2,607	2,345	352
Light Street Car in <i>Heijo</i>	1.36	2.00	Human power	92,377	—	8,913	7,506	1,407
Light Railway between <i>Seishin</i> and <i>Kainei via Ranan</i>	80.00	2.00	Human power	54,596	5,242	63,974	60,567	3,407
Light Railway between <i>Kanko</i> and <i>Seikoshin</i>	8.25	2.00	Human power	10,909	8,566	24,775	23,523	1,252

THE PEKING-KALGAN RAILWAY AND ITS EXTENSION

In pursuance of his desire for intimate acquaintance with China's railways, and some direct knowledge with regard to their construction and maintenance, Dr. Sun Yat-sen traversed the line between Peking and Kalgan early in September. Leaving Peking on the morning of the sixth he reached Kalgan on the seventh, and had opportunity to obtain first hand knowledge of the first of China's railways to be built by Chinese engineers and be controlled by Chinese traffic managers and general staff. The Chinese are proud of this effort. Not only does the route present acute difficulties from an engineering point of view, but it also tests the efficiency of those deputed to run it. Dr. Sun was shown that the line was not only being well maintained, but that it has been brought to a profit-earning stage.

We are able to give herewith an interesting statement of figures which shows the results of working from the period of opening to date, and study of them will exhibit the reasons for the assumption in Chinese circles that properly trained Chinese are able effectively to cope with many of the difficulties which are overcome by Europeans in the management of new lines.

The line now open to traffic is 201.73 miles in length, the present terminal being at Yangkowhsien. To Kalgan the distance is 123.89 miles, and the earning capacity of the line is on the increase, according to the figures given. Between October 14, 1900, when the line was opened to regular traffic, and February 9, 1910, the loss was \$326,156, with a ratio of working expenses to earnings of 168.45%. By January 29, 1911, a profit of \$75,395 had been made, with a reduction in the ratio of working expenses to earnings to 94.32%. By February 12, 1912, the profit had been increased to \$649,602, with the ratio of working expenses to earnings at 60.12 %, and the present year gives indications of a record, the result for the period between February 13, 1912, and June 30, 1912, being a profit of \$540,623, with the ratio of working expenses to earnings standing at 42.50 %. This is an excellent showing. The capital charge on the line, including value of all assets, is set down at Taels 6,935,086, whilst that of the Mentoukou branch line is Taels 561,787. This branch line



DR. JEME TIEN-YU, PH.D.
BUILDER OF THE KALGAN RAILWAY

runs out from Peking a distance of some sixteen miles to a group of coal mines and transports some 500 tons per day to the capital. The freight carried from the interior on the main line is composed mainly of grain, millet, kaoliang, linseed, and wheat, whilst wool, hides, and furs also come down in increasing quantities. Pigs are also transported, and it is hoped ere long to develop traffic in horses, cattle and sheep from the great grazing grounds of Mongolia.

The cost of working the system is greatly increased by the necessity which exists to break the trains to descend or ascend the Nankou Pass. There the grade at its steepest is one in thirty, whilst the curves have no greater radius than 600 feet. To negotiate this part of the line special locomotives are employed, Mallet engines being used on the passenger trains, and American-g geared Shay locomotives for freight. The Mallet engines weigh 105 tons when loaded, and the Shay engines 100 tons. The down trains are divided at Nankou, and the sections shoved up the inclines to Kongchuang, where the train is reformed for its journey to the terminus. The up trains are similarly divided at Kongchuang and reformed at Nankou for the continuation of the journey to Peking, Mogul engines being used on the line either side of the pass. The working of the pass is extremely dangerous owing to the sharp grades and narrow curve radius, but ample provision in the shape of catch sidings is made to arrest runaways, whilst an extra force of maintenance men and track walkers is employed to keep a constant eye upon the permanent way and the cuttings and embankments. The greatest vigilance is shown in this particular section, and no opportunity is given for landslides or weakening of retaining walls. In this respect the Engineer-in-chief shows a realisation of the importance of unceasing effort in maintaining a high standard of efficiency that is unusual in Chinese. Mr. Kwang King-yang, the Engineer-in-chief, who was originally the divisional engineer in charge of the construction from Peking to Nankou, deserves high praise for the efficiency which he has secured throughout the whole length of the line.

As has been pointed out in previous issues of the FAR EASTERN REVIEW the line is built

OFFICIAL REPORT PEKING-KALGAN RAILWAY

(Mentonkou Branch Line included)

Results of operation (From the opening of the Line up to date)

Date	Particulars	Earnings detailed		Earnings & Working Expenditure		Working Results (Profit or Loss)		Ratio of Working Expenses to Earnings
		Dollars	cts.	Dollars	cts.	Dollars	cts.	
14th Oct. 1909 to 9th Feb. 1910	Passenger	120,852	750					
	Freight	345,656	140					
	Miscellaneous	9,032	695					
	Total Earnings			476,441	585			
	Total Working Expenditure			802,598	330			
	Loss (Net)					326,156	745	168.45% *
10th Feb. 1910 to 20th Jan. 1911	Passenger	427,007	530					
	Freight	875,546	370					
	Miscellaneous	27,078	500					
	Total Earnings			1,329,632	440			
	Total Working Expenditure			1,254,236	875			
	Profit (Net)					75,395	525	94.32% †
30th Jan. 1911 to 12th Feb. 1912	Passenger	447,980	500					
	Freight	1,001,835	710					
	Military Traffic	142,809	700					
	Miscellaneous	36,424	454					
	Total Earnings			1,629,050	364			
	Total Working Expenditure			979,447	444			
	Profit (Net)					649,602	920	60.12% †
13th Feb. to 30th June 1912	Passenger	183,768	150					
	Freight	819,568	800					
	Miscellaneous	30,892	144					
	Total Earnings			1,034,229	184			
	Total Working Expenditure			439,606	122			
	Profit (Net)					594,623	062	42.50% †

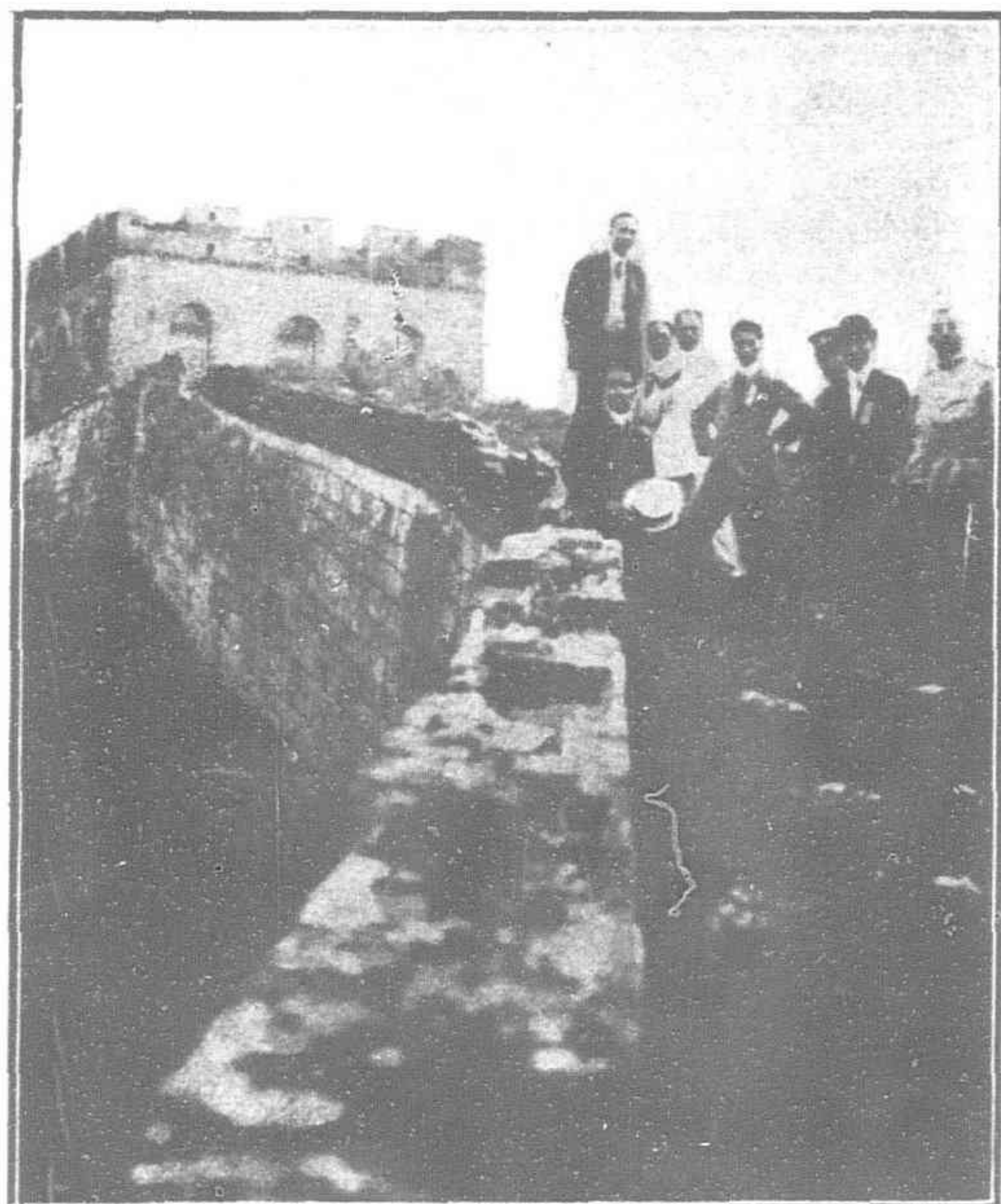
* Loss. † Profit.

Comparative Statement of Passenger and Freight Earnings

(From the opening of the Line up to date)

Date	Passenger Earnings		Average Monthly Passenger Earnings		Freight Earnings		Average Monthly Freight Earnings	
	Dollars	cts.	Dollars	cts.	Dollars	cts.	Dollars	cts.
14th Oct. 1909 to 9th Feb. 1910	120,852	750	30,213	187	345,656	140	86,414	035
10th Feb. 1910 to 20th Jan. 1911	427,007	530	35,583	960	875,546	370	72,962	197
30th Jan. 1911 to 12th Feb. 1912	447,980	500	34,907	570	1,001,835	710	78,065	120
13th Feb. to 30th June 1912	183,768	150	40,241	200	819,568	800	179,467	640

All amounts—Local Currency.



DR. SUN YAT-SEN AND PARTY ON THE GREAT WALL OF CHINA

to standard gauge, that is 4ft. 8½ inches. The rails are 85 lbs. steel rails of Belgian make, the sleepers, except on the Pass, being Japanese, 13 being used to a 30ft. length of rail. American Oregon pine ties creosoted, are used on the Pass, and special provision is made to prevent the line slipping. The ballasting is of crushed stone from the quarries of the railway, eight inches being beneath the ties.

The most difficult portion of the line to construct was, of course, at the Nankou Pass. There the cutting was exceptionally heavy and the ascent of the gorges extremely difficult. Four tunnels had to be bored, the one on the summit being 3000 feet in length. It took four years to build this section. The longest bridge on the line is 800 feet, all bridges being steel girders on concrete piers, the largest span being a 110 foot girder. The station buildings are neat and serviceable. They are of brick, with corrugated iron roof, and are all built to one design. The platforms are faced with stone or concrete.

There is a short spur at Chi Ming Shan built to bring coal in from the Railway's mines some three miles distance. The output is about 150 tons per day. This line has been operating about four years.



MR. K. Y. KWONG

PRESENT ENGINEER-IN-CHIEF OF THE KALGAN RAILWAY AND EXTENSION



MR. C. T. SHAR
TRAFFIC MANAGER, PEKING-KALGAN
RAILWAY

Work will be continued to Tatung-fu as soon as money is available. The line will skirt the rocky hills that abound and it is expected that it will be carried out with a grade no greater than one of one per cent. There will probably be one tunnel of some 500 feet to bore, but otherwise no difficulties, except for a bridge of some 2,000 feet length (20 spans of 100 ft. steel girders on concrete pillars) at Tatung, where a river will have to be crossed at an awkward place to bring the line into the city. In their vicinity there are large coal fields, which are now being worked by the natives, mostly in a primitive way. There is some modern machinery on the ground, which was carried with tremendous difficulty over the long distance on carts, but when the line is down it is expected that a great fillip will be given to development of these coal fields.

The first stage of the projected line will end at Sui-yuan, and the matter of the Urga extension will be further considered. It is quite possible that in the near future the present branch line to Mantoukou from Peking will be continued to join the present line at Shaching station, in order to secure an easier grade. When the main line was originally built the engineer was given no choice of route, the officials desiring the nearest and cheapest route to Nankou. With the development of the line, however, the deviation will be made.

The Managing Director of the line is Mr. Kuan Mien-chun, who takes a keen interest in his work and his staff, and with his traffic manager, Mr. C. T. Shar, deserves commendation upon the successful results attained in the working of the line.

It may be incidentally mentioned that the Great Wall of China is passed through in the Nankou Pass, and the tourist is given an excellent opportunity of viewing the tremendous difficulties overcome by the ancient builders in carrying the wall up the precipitous steeps and along the crest of the mountains. To enable Dr. Sun Yat-sen to go to the wall the train was delayed some time. Despite the lateness of the hour—it was after six in the evening—the party clambered to the wall and there in the drizzling rain and mist a photograph was taken. The result is unique inasmuch as it is the first and only picture of the attainment by Dr. Sun Yat-sen of a seat on this ancient pile in the far north of the Republic.

PEKING KALGAN RAILWAY

Official Report of Capital Work

[From Lin-Chune, Feng-tai to Kalgan
(sidings included) 449 Chi. lis]

Particulars	Amount	
	Taels	cts.
Land	321,668	8870
Material and Rolling Stock	3,888,817	0626
Construction Work	2,084,792	9560
Administration and Engineering Charges	288,861	3080
Telegraph Line	89,364	4270
Police	23,485	5230
Material Transportation	179,844	6740
Train Working	52,355	0310
Public Works (Hsichihmun)	5,896	3370
Total.....	6,935,086	2050



MR. KUAN MIEN-CHUN
MANAGING DIRECTOR, PEKING-KALGAN
RAILWAY

Mentoukou Branch Line Official Report of Capital Work

[From Hsichihmun to Mentoukou
..... 47.4 Chi. lis]

Particulars	Amount	
	Taels	cts.
Land	45,879	9810
Material and Rolling Stock	380,740	6215
Construction Work	68,344	3680
Administration and Engineering Charges	40,091	6080
Telegraph Line	952	3080
Police	1,020	0730
Material Transportation	24,758	4660
Total.....	561,787	4255

All amounts—Local Currency.

HANYANG IRON AND STEEL WORKS

(Official Report)

The Han-yeh-ping Iron & Coal Co. (Ltd.) has furnished Consul Roger S. Greene, the following figures as to operations in the year 1911 (Chinese calendar, Jan. 30, 1911, to Feb. 17, 1912):

Pig iron.	Tons.
Total output	93,337
Shipments to:	
Hankow and other Chinese ports.....	9,824
Japan	58,535
United States	4,465
Australia	5,765
Saigon	40
Total	78,629

Rails.	Tons.
Total output.....	24,216
Sales of rails and fastenings in China	23,492
Merchant bars, sales in China	1,250

During the year 359,467 tons of iron ore were produced at the company's Tayeh iron mines. According to the Chinese customs returns, the export of iron ore and pig iron in tons, for the year 1911 (new style), were as follows:

	To foreign ports.	To Chinese ports.	Total.
Iron ore	110,500	20	110,520
Pig iron	51,300	26,128	77,428

The iron and steel works at Hanyang have been shut down since the outbreak of the revolution last October, but preparations for resuming work are well advanced, the furnaces not having been so seriously injured as expected by being abandoned while charged. The foreign experts formerly employed have all been discharged. The iron mines at Tayeh continued working throughout the fighting.

ELECTRIC INSTALLATION AT HOLT'S WHARF, LOWER POOTUNG, SHANGHAI

For the lighting of the new wharf which Messrs. Alfred Holt & Co., of Liverpool, (the Ocean Steamship Co.) have recently built at Lower Pootung electric generating plant has been installed in a power house at the back of the wharf premises.

This plant also supplies power to lifts in the storage godowns and to pumps used for the fire service, these being all electrically operated.

The generating plant consists of two direct coupled gas engine sets, each capable of a normal continuous current output of 116 kilowatts at 220 volts and running at a speed of 240 r.p.m. (Figs. 1 and 2.)

The gas engines, which are of Messrs. Campbell & Co.'s manufacture, are of their most modern four cylinder vertical type, fitted with low tension magneto ignition and provided with specially heavy flywheels to ensure steady running and reduce cyclic variation within the limits required for electric lighting. The governors are of the makers' improved throttle type working on the "variable quality" system.

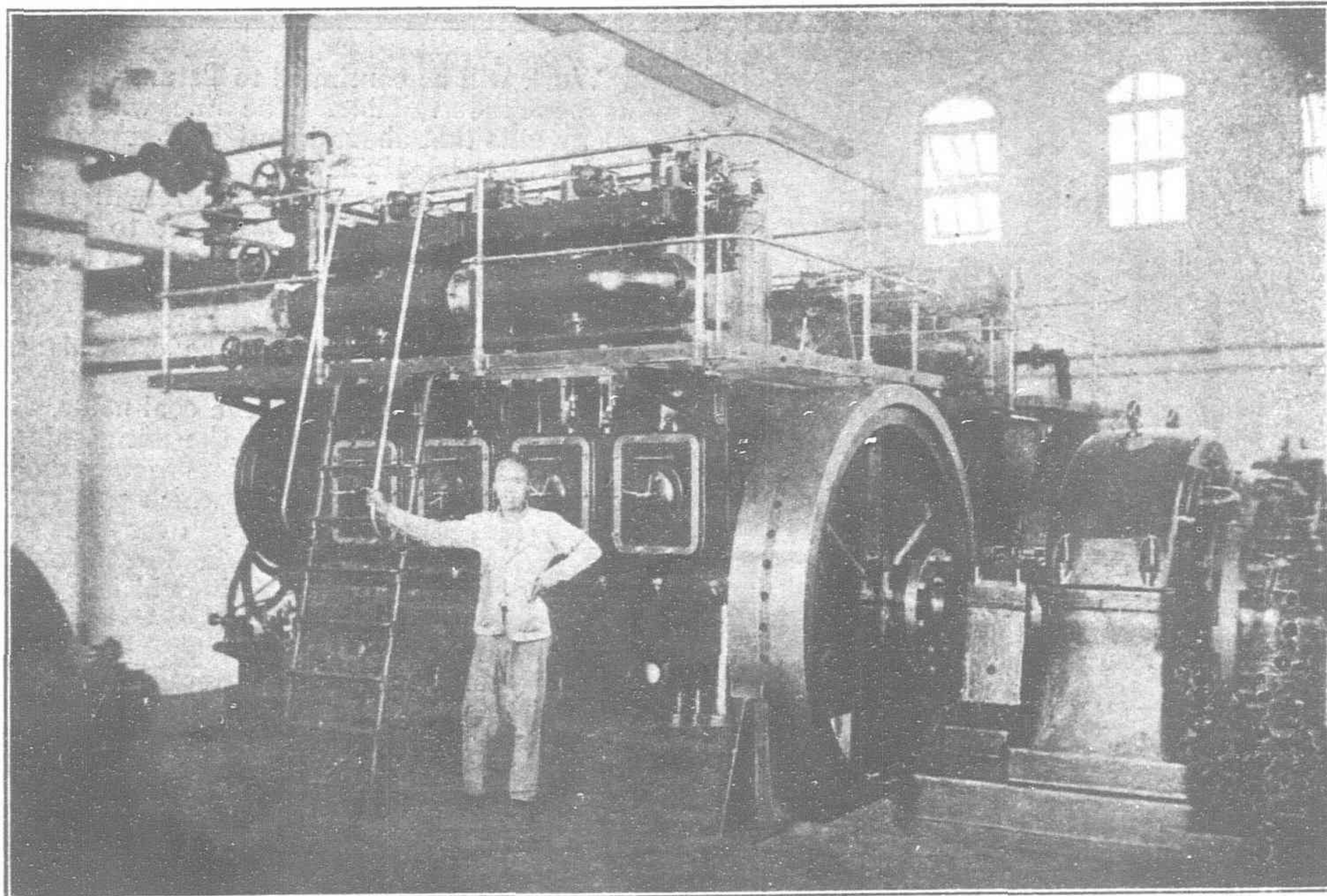


FIG. 1.—DIRECT CONNECTED GENERATING SET:
CAMPBELL GAS ENGINE AND SIEMENS BROS
DYNAMO—116 K.W., 220 V., 240 R.P.M.

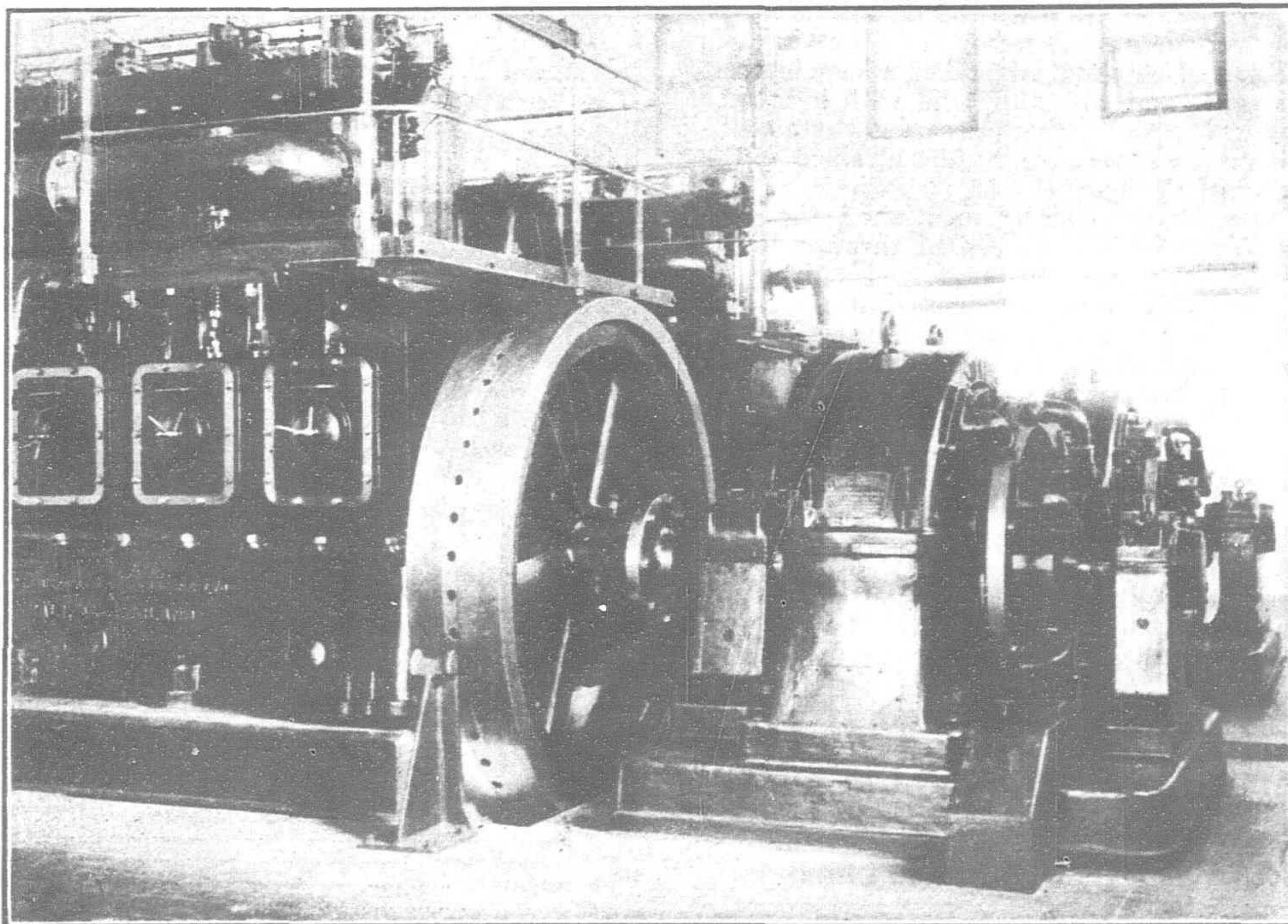


FIG. 2.—SAME AS FIG. 1

in which only the strength or quality of the mixture is varied, its quantity and consequently the degree of compression in the cylinder remaining practically constant, thus ensuring ignition even of weak mixtures.

The dynamos are of Messrs. Siemens Bros. Dynamo works' manufacture, having cast iron magnet frames divided horizontally, with laminated iron pole pieces, and over-compound wound field coils. The armatures are of the slotted drum type with former-wound multiple coils. All the windings have been treated with special damp-proof impregnation to adapt the machines for use in a damp climate.

A third Campbell-Siemens set of smaller capacity (Fig. 3) has also been installed to deal with the reduced night load in the event of arc lamp lighting on wharf and in sheds not being required for the discharging of cargo, and in this case the entire load of incandescent and police lighting is taken by this small set. The engine is of the single cylinder horizontal type and is direct coupled to a compound wound dynamo capable of giving a normal output of 15.5 kilowatts at 220 volts, running at 210 r.p.m.

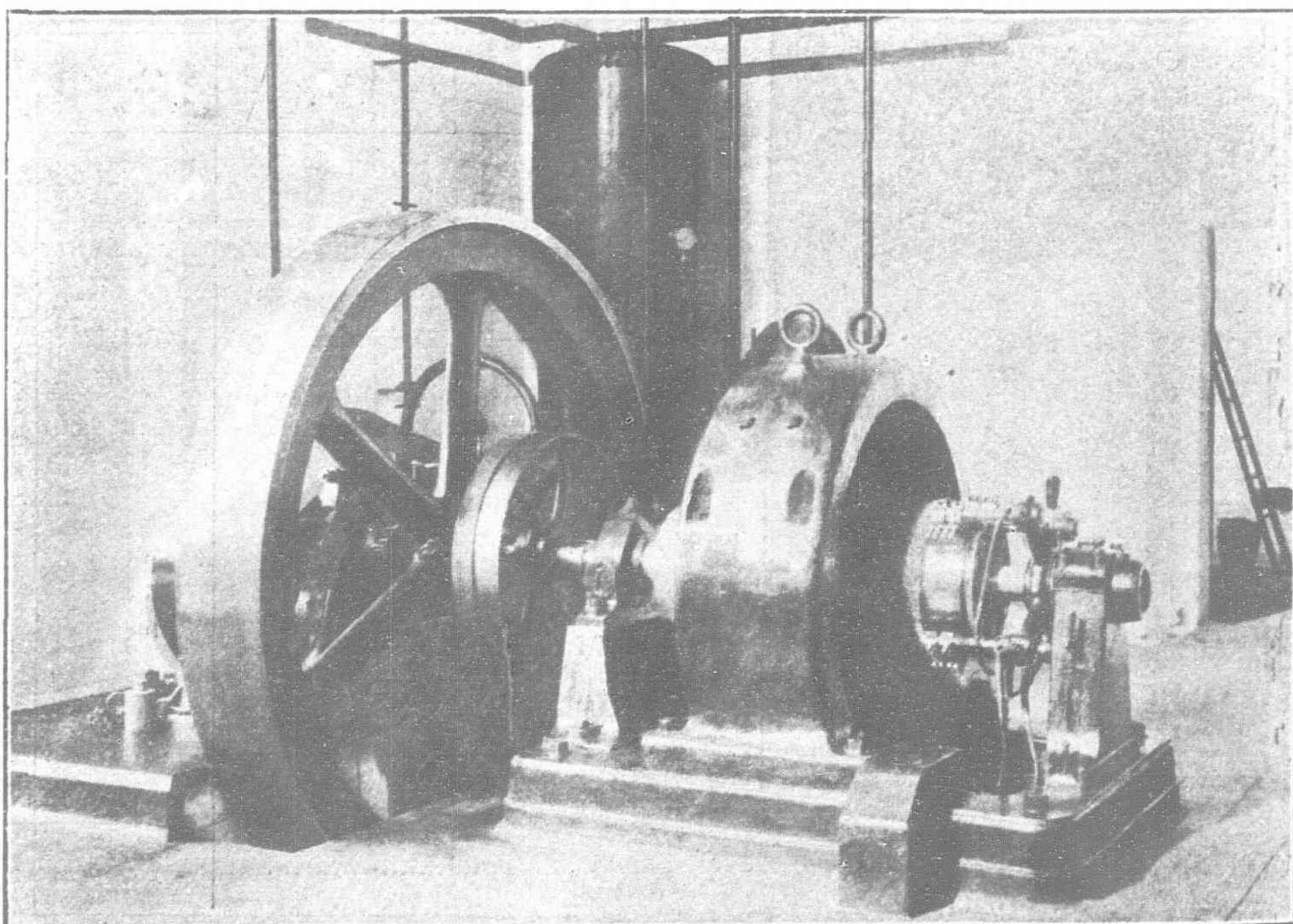


FIG. 3.—CAMPBELL-SIEMENS GENERATING SET, 15.5 K.W., 220 V., 210 R.P.M.

The gas for the above engines is supplied by suction gas producer plant (Fig. 4), each engine having its own producer, the two large sets being cross-connected so that either engine can be run off either producer.

The producer plant is of Messrs. Campbell's latest pattern, the generators being of the open hearth type, which possesses several advantages over other types; for instance, inferior fuel, the use of which is impossible in generators fitted with the ordinary firegrate, can be used with satisfactory results; also, the plant can be kept at work continuously for long periods, as the fire can be cleaned and clinker removed while in full operation and without interfering with the production of gas. A further advantage is that the plant can be started up in less time than one of the ordinary type.

Cleaning and cooling of the gases is effected in coke and sawdust scrubbers.

The main switchboard, (Fig. 5) supplied by Messrs. Siemens Bros. Dynamo Works, is situated in the engine room, and consists of generator and feeder panels equipped with circuit breakers with automatic releases and all the necessary instruments and switches.

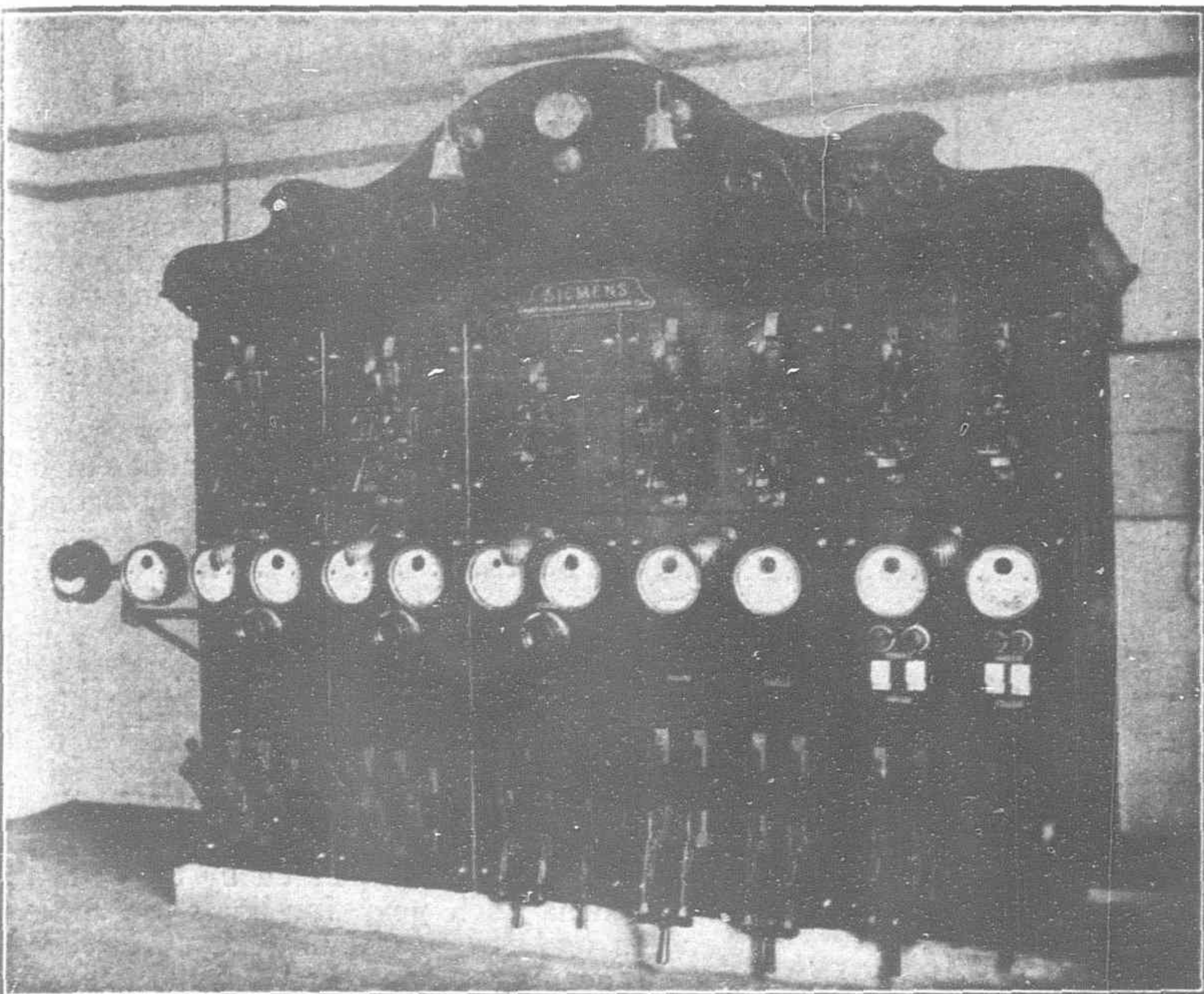


FIG. 5:—MAIN SWITCHBOARD

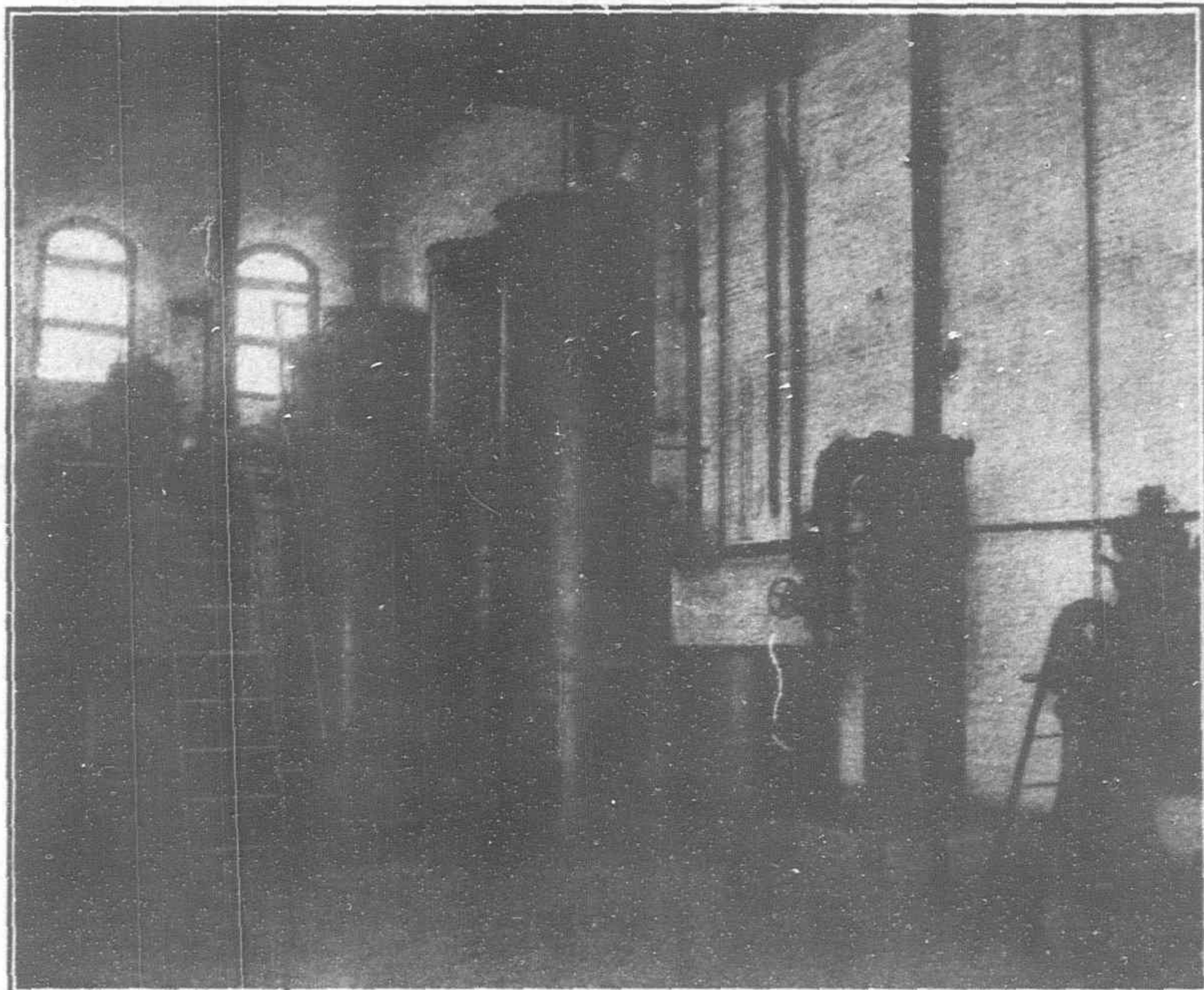


FIG. 4:—CAMPBELL GAS PRODUCERS

Paralleling instruments and switchgear are also provided so as to enable the sets to be run in parallel if required.

The main cables are run overhead (Fig. 6) from the power house to the office building, where the main distribution board is situated, and to the pump house. Those aerial cables, which are single braided, vary in size from one half to nearly one square inch section of stranded copper, and are supported from galvanised steel suspension wire by rawhide clips.

In the pump house, situated on the bank of the creek are installed two Campbell-Siemens electrically driven pumps. The pumps are of the three-throw ram type, 9 inch by 12 inch, each capable of delivering 480 gallons of water per minute against a head of 240 feet. The pumps are for use in case of fire occurring on any part of the premises, and an extensive system of underground piping and hydrants has been installed for this purpose. The pumps are driven through double reduction spur gearing by compound wound motors of 50 B.H.P. capacity each. These motors are fitted with commutation poles.

The four lifts in the storage godowns, which are four storied, are electrically operated. Each has a lifting capacity of $1\frac{1}{2}$ tons of cargo at a speed of 60 feet per minute.

The whole of the wiring has been carried out on the distribution box system. All cable on the distributing side of the main distribution board consists of rubber insulated, lead-cased, "Association" cable of 2,500 megohm grade, varying from 19/14s. to 1/18s. S.W.G., and is run on porcelain insulators or cleats, being exposed throughout.

The fuses on the main distribution board and in all sub-distribution boxes are of Siemens "Zed" cartridge type. These fuses, besides operating in a perfectly quiet manner and giving a clear visible indication when "blown," have the advantage that a blown fuse can be easily and quickly changed, and their construction obviates the possibility of inserting a fuse of too large a capacity.

The wharf and premises are lighted by twenty 2,000 candle power arc lamps and six 1,000 candle power arc lamps, suspended from 50 foot steel poles (Fig. 7).

The transit sheds are lighted internally by means of thirty-four 1,000 candle power

arc lamps. All the arc lamps are of Siemens' differential open type, capable of burning for about 24 hours without retrimming.

The godowns, office and quarters, power house, Chinese quarters, etc., are lighted by 16 and 32 c.p., incandescent lamps, carbon filament and "Tantalum," altogether about 900 in number.

The electric installation both as regards lighting and power equipment is in accordance with the most modern practice, and in thorough keeping with the wharf and buildings which are undoubtedly one of the finest examples of re-enforced concrete construction in the Far East.

Japanese Rubber Co. in Malaysia:—Messrs. Asada and Tajiri are about to form a company aided by the former managers of the Tokyo Railway Company.—Messrs. Mudaguchi, Inouye, Ando, Isobe, and Koizumi, with a capital of 500,000 yen. The object of the company is to cultivate the rubber tree in the Malay Peninsula.

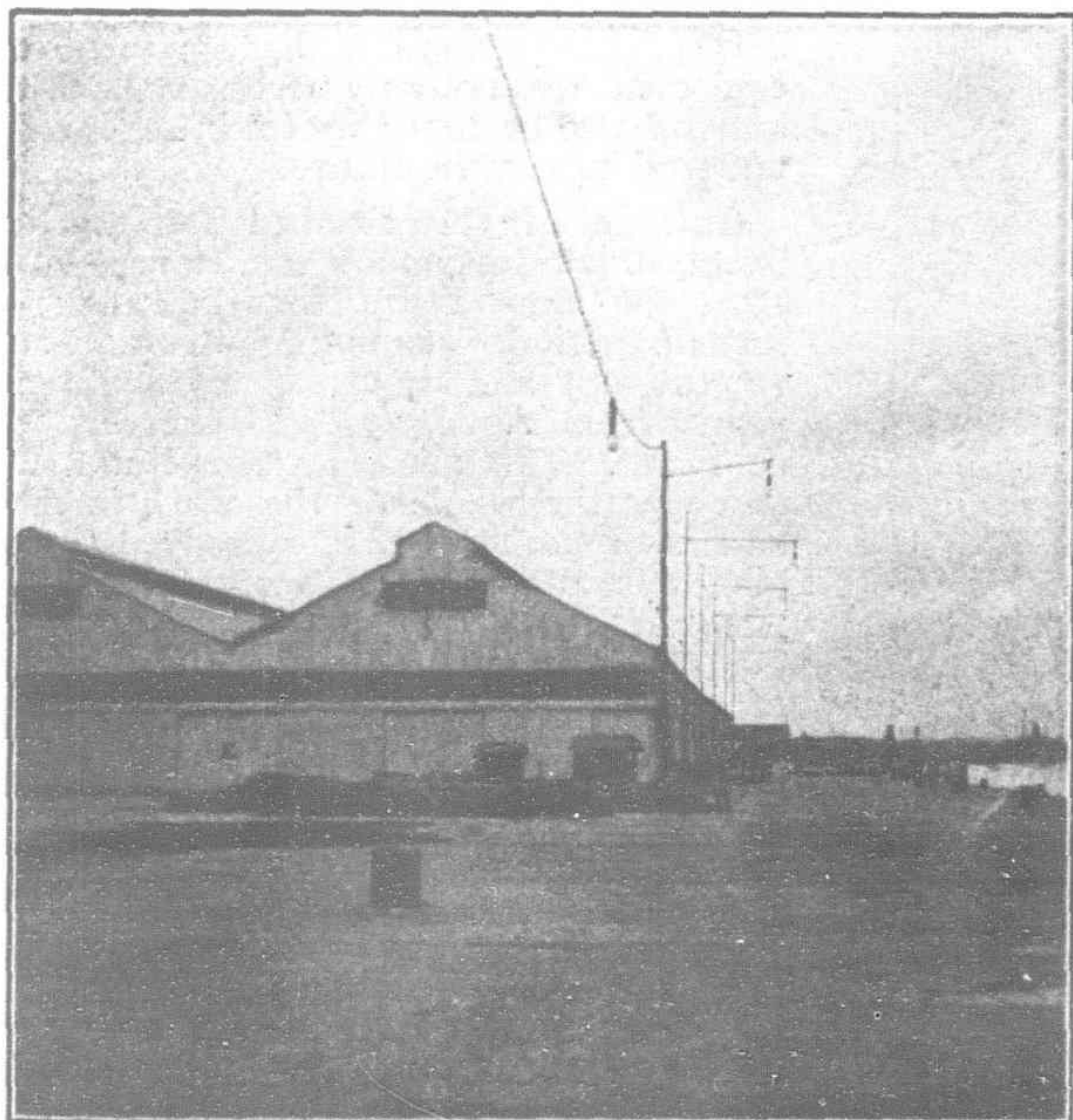


FIG. 7:—LIGHTING OF WHARF

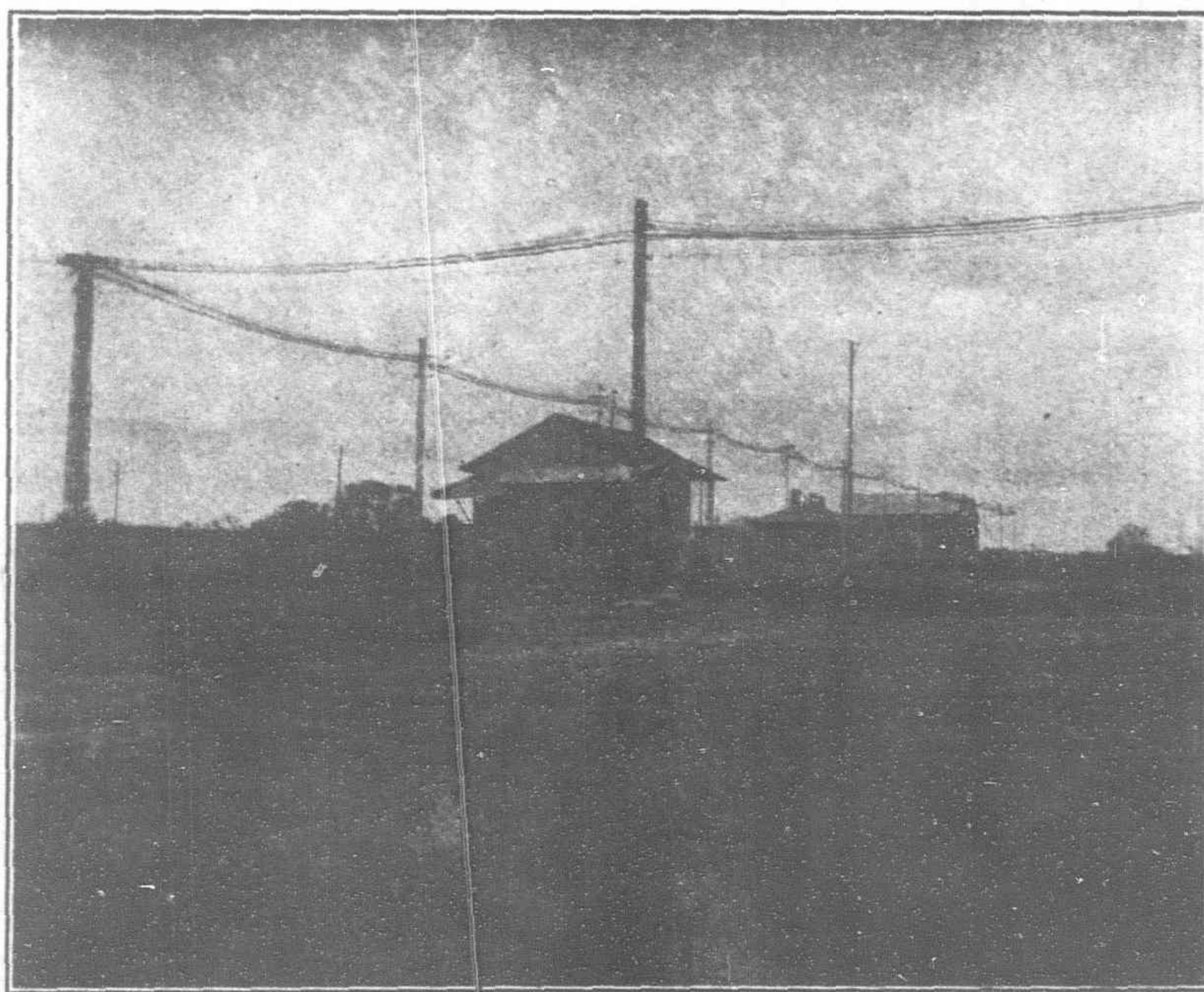


FIG. 6:—MAIN CABLES

IMPROVEMENT OF KELUNG HARBOR



MR. T. TAKAHASHI

DIRECTOR OF THE PUBLIC WORKS DEPARTMENT, GOVERNMENT OF FORMOSA

It was not until 1898 that plans for the improvement of the Formosan port of Kelung were completed and an estimate of the cost submitted to the thirteenth session of the Japanese Imperial Diet. As the improvement of the harbor would not be fully accomplished unless it included both the dredging of the inner harbor and the construction of a breakwater at the entrance, the cost of the work was included in one budget and estimated at 10,000,000 yen (about \$5,000,000).

Although the importance of the work was not denied in the Cabinet meeting, it was decided that on account of the financial condition of the Empire at that time the work should be divided into periods, the first of which should meet only the urgent needs and consist of dredging parts of the inner harbor, to afford a safe anchorage, facilitate the working of cargoes, and secure better conveniences and a larger degree of safety to passengers than had hitherto been experienced from anchorage in the outer harbor. The work of the second period was to include the construction of the breakwater and other necessary quay walls and dredgings. With an appropriation of 2,000,000 yen (\$1,000,000), the work that was to cover the four years from 1899 to 1902 was undertaken.

The Work of the First Period.—The object of the work of the first period was to dredge approximately 1,800,000 cubic yards from the inner harbor and to construct a temporary wooden pier of sufficient dimensions



DR. K. KAWAKAMI

CHIEF-ENGINEER, KELUNG HARBOR WORKS

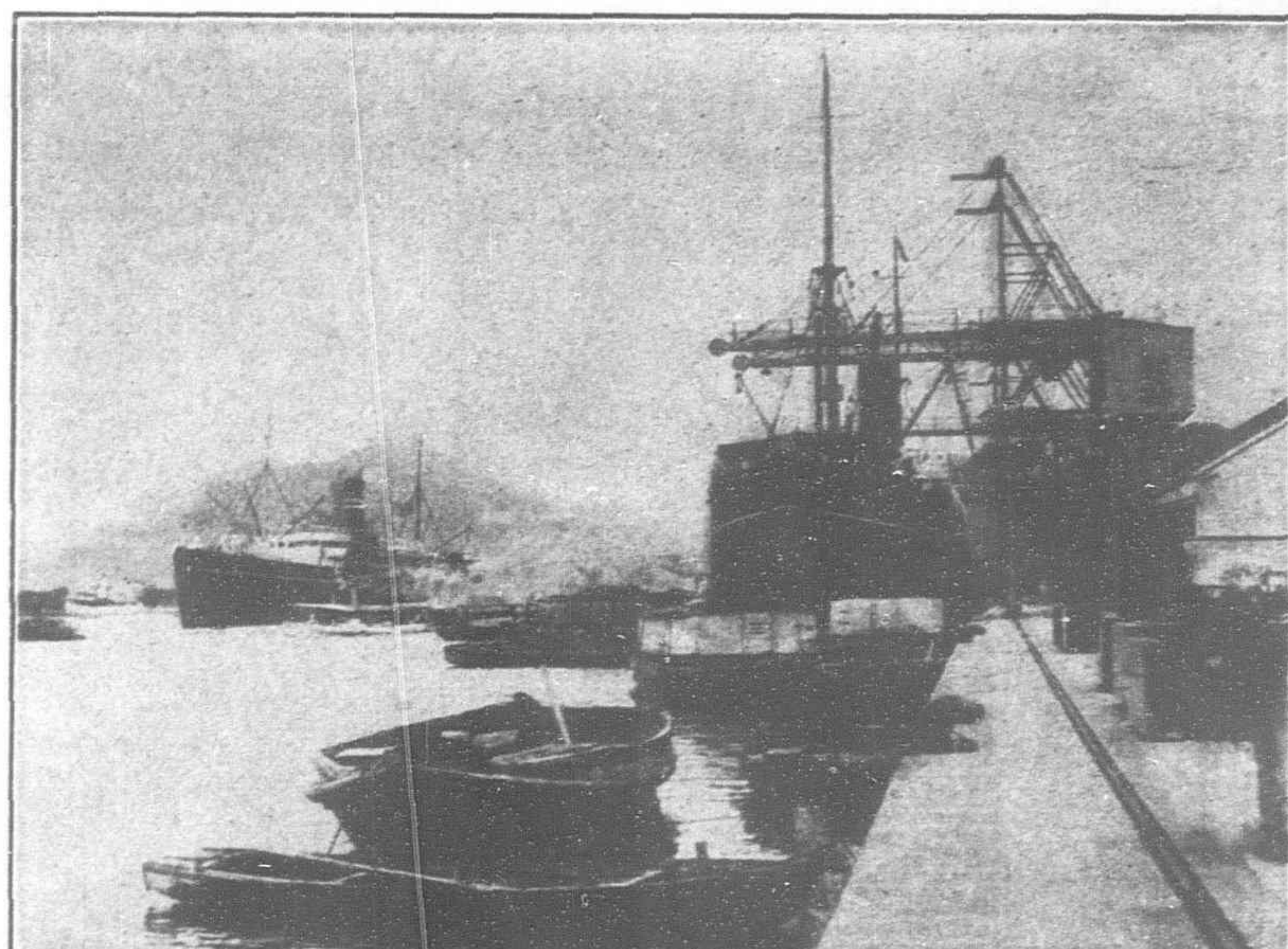
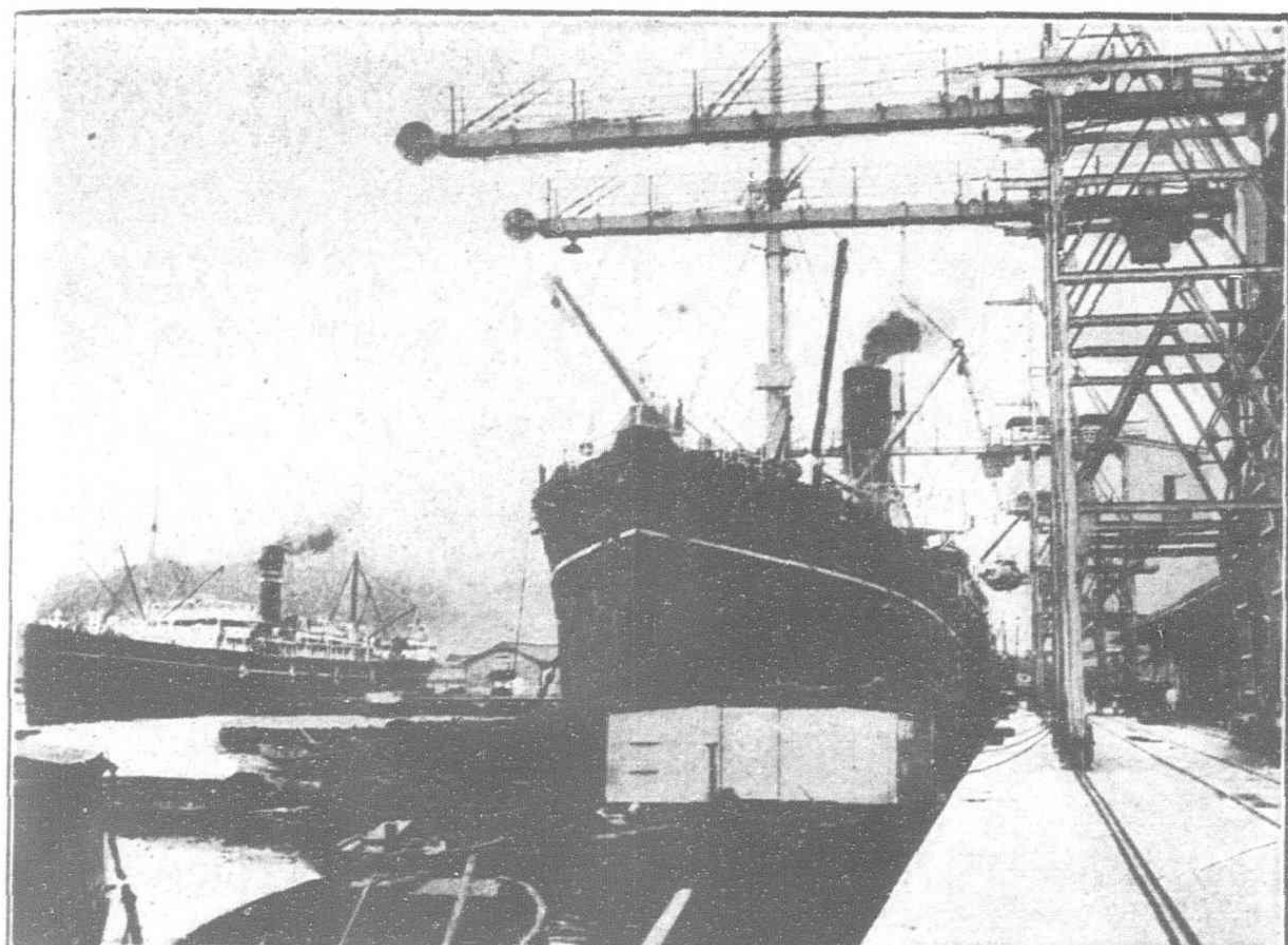
to permit steamers of 3,500 tons to lie alongside. Numerous accidents (including the loss at sea of two dredgers) and unforeseen delays occurred, and it was not until 1902, or the last year of the first period, that dredging was done satisfactorily. By June, 1902, the dredging of a portion of the inner harbor was finished. The temporary wooden pier was then constructed and thereafter large steamers were enabled to lie alongside. This pier obviated the inconvenience to passengers of boarding by means of sampans and the loading and discharging of cargoes through lighters. A careful investigation of the nature of the work and the conditions under which this pier was constructed should conclusively prove that its construction was not uneconomical. This pier cost 80,000 yen (\$40,000), the expense being about equally divided between material and labor. Much of the material, being iron, can be removed and utilized elsewhere if necessary. Furthermore, the sum expended by the Osaka Shosen Kaisha each year for boats to handle passengers and cargo will now be saved, and from this saving alone the expenditure of 80,000 yen will be realized in two years and two months.

The length of the pier is 448½ feet and its width 24 feet. It affords accommodation for a steamer of 3,000 tons to lie on each side and discharge cargo at the same time with safety. In addition to this work, an area of about 15 acres was dredged to a depth of 6 feet at low water for an anchorage for steam launches and junks and to give shelter in times of storm to a number of towing boats belonging to the Harbor Improvement Bureau. Three fairways were also dredged to a width of 90 feet and a depth of 5 feet at low water. These fairways extended in the direction of Giju-bashi and the market place. Of the soil from these fairways and the anchorage for launches and junks about 157,200 cubic yards were utilized for reclamation. The main channel leading to the pier, while but 400 feet at its narrowest, is much wider at both entrances, so that there is no inconvenience to steamers passing in and out, and while two steamers lie alongside the pier there is also room for another at anchor.

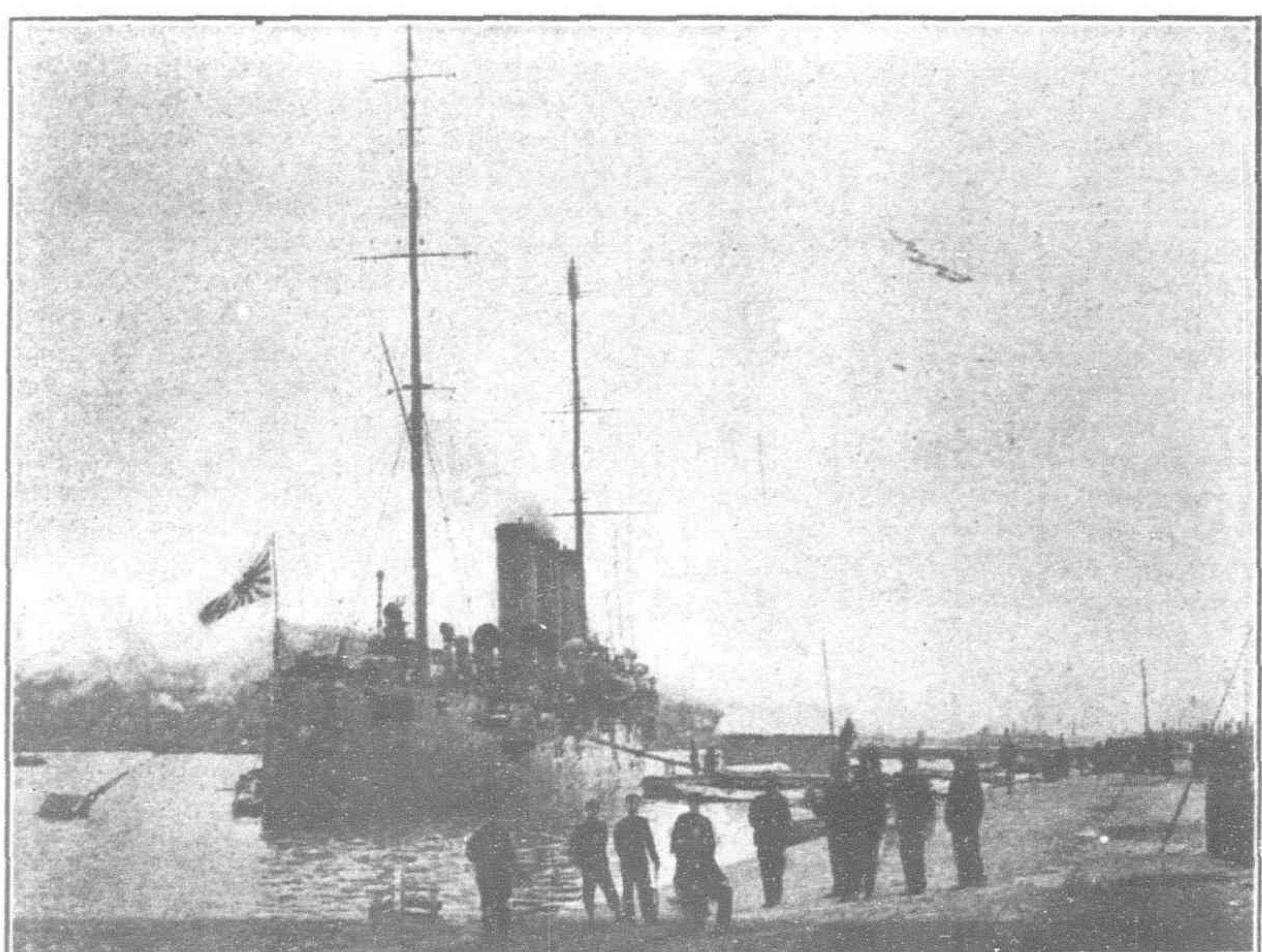
As the Harbor Improvement Bureau had acquired many vessels, machines, tools, etc., it became necessary to have an ironworks and machine shop to keep the property in repair; also two slipways for repairing the vessels. One of these slipways is 750 feet in length and is capable of taking vessels up to 1,000 tons; the other has a length of 358 feet and accommodates vessels up to 100 tons. The most expensive items in the list of properties are 2 dredgers (which cost \$301,725), 11 hopper barges, and 9 steam launches for towing. This equipment was not only necessary in this work, but will also be found useful in other extensive undertakings in the future.

Outline of the Second Period.—In the twenty-third session of the Imperial Diet, in 1906, the expenditure for the work of the second period, amounting to 6,200,000 yen (\$3,100,000) and to spread over seven fiscal years, from April, 1906, to March, 1913, was approved. This amount was still not sufficient to cover the whole of the work in the outer and inner harbors. Accordingly, the original plan was altered, and it was decided to complete first the warehouses and quay accommodations that were greatly needed on account of the enormous increase of traffic, while the construction of breakwaters at the entrance of outer harbor was set aside as an undertaking for the future.

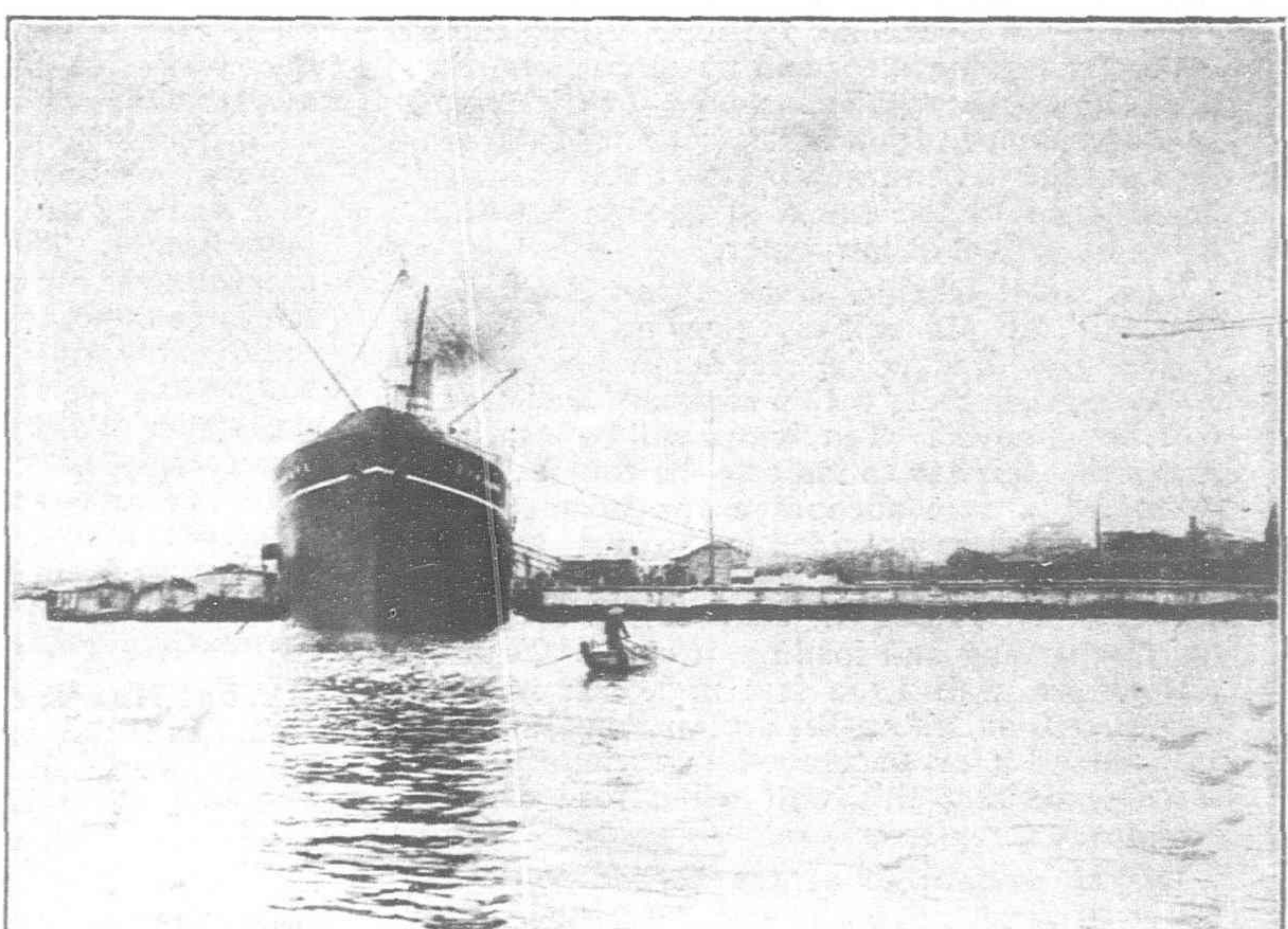
The following is an outline of the work of the second period: The work will cover a period of seven years, from April, 1906, to March, 1913. A quay wall 2,550 feet in length is to be constructed between the new and old railway stations, and sheds and warehouses will be erected, where also electric capstans and cranes will be provided. Quay walls to accommodate junks and steam launches are to be constructed along the shore of Dai-Kelung



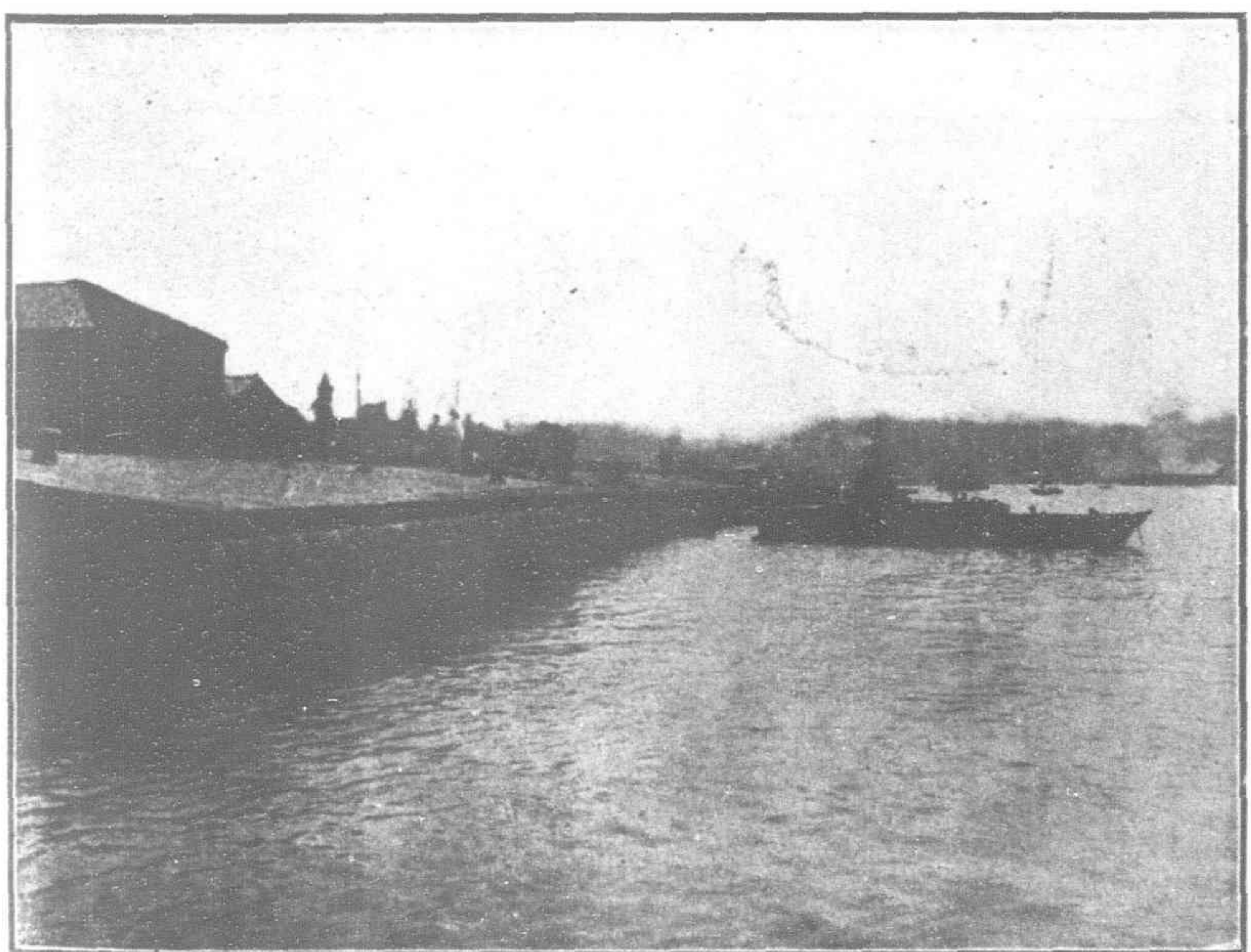
ELECTRIC LOADING, UNLOADING AND TRANSPORTING MACHINES



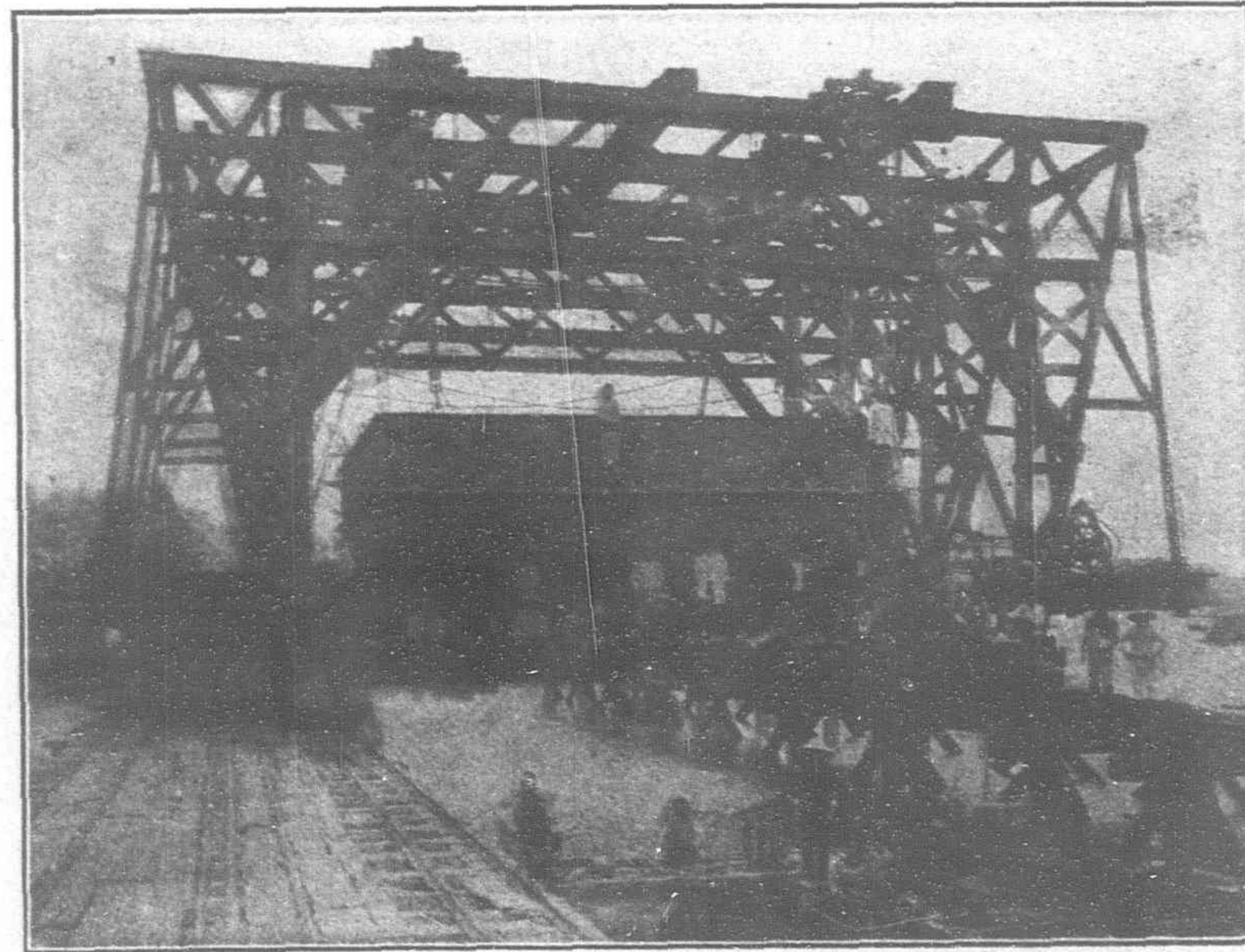
QUAY WALL AT SHIO-KELUNG



QUAY WALL IN FRONT OF NEW RAILWAY STATION

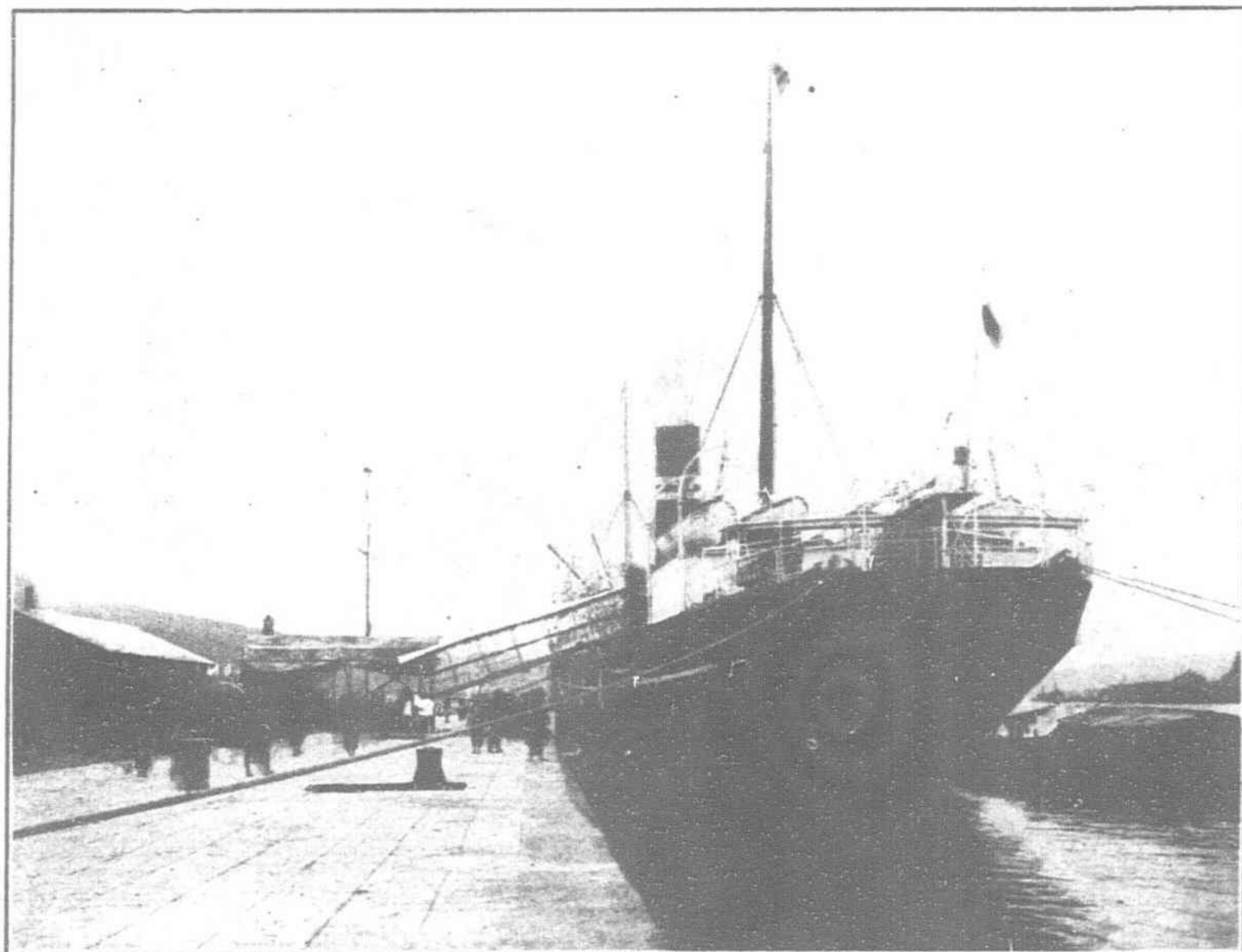


PORTION OF NEW QUAY WALL

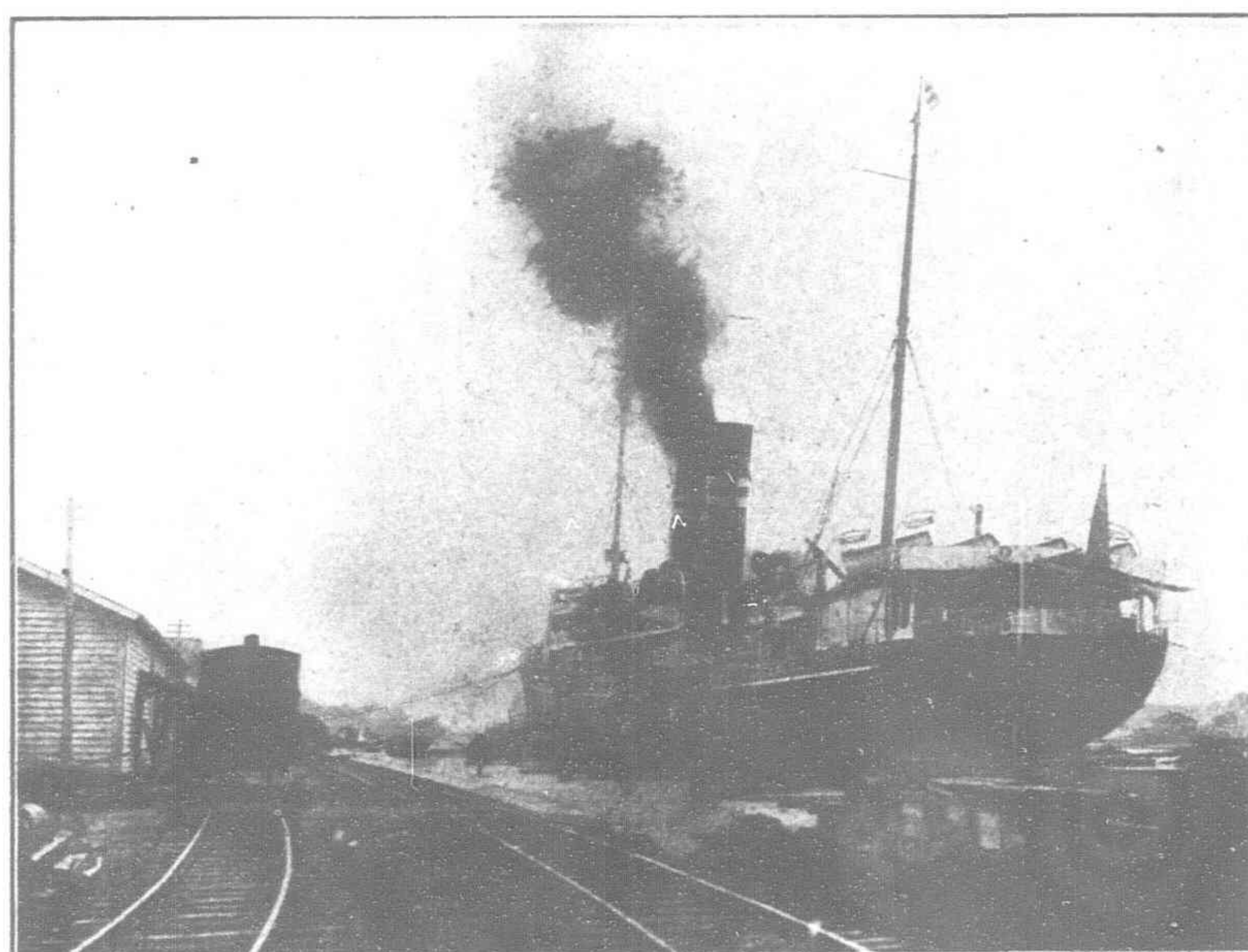


CONCRETE BLOCK SETTING TRAVELLER

VIEWS OF KELUNG HARBOUR WORKS



QUAY WALL IN FRONT OF NEW RAILWAY STATION



QUAY WALL IN FRONT OF RAILWAY GODOWNS

for a distance of 2,460 feet; at Sho-Kelung, 5,220 feet; at Gyuchoko, 732 feet. Along these walls 10 landing steps and numerous mooring buoys and rings will be provided for the small-boat and sampan traffic. The bottom of the sea between the old and new railway stations is to be dredged to the extent of 2,400 feet, with a depth of 30 feet at low water.

Two small islands, Haukan and Haubo, in front of the old railway station, are to be blasted and dredged 30 feet below low water. All submerged reefs within steamers' anchorage will be removed. Ten buoys will be installed along the fairway to indicate the course; also, to afford a safe anchorage for steamers, 10 moorings will be provided in the inner harbor. Sheds and warehouses, provided with cranes, will be erected along the quay wall to facilitate the discharging and loading of cargo. A protecting sea wall 1,100 feet in length will be constructed at Senton-Bi (Senton Point), where an area of 3 or 4 acres will be reclaimed. It is expected that this wall will afford a safe anchorage for vessels inside the point.

By the completion of the harbor works, a water area of 17 acres, with a depth of 12 to 30 feet at low water, will be secured inside the point for anchorage of steam launches and junks; also an anchorage of 100 acres, with a depth of more than 30 feet at low water, will be provided inside the point, where five steamers, ranging from 3,000 to 6,000 tons may

be accommodated alongside the quay wall and eight steamers of the same size at mooring buoys. Besides these, an area of 45 acres will be available for general anchorage. The sea bottom near Senton Point will be left in its present state of shallowness, except for the dredging of a fairway 480 feet wide to connect with the inner harbor. This shallow water, together with sea wall to be constructed at the point, may break the force of waves and protect the inner harbor.

To carry out these works, the following budget had been prepared and was approved by the Imperial Diet: Salaries, wages, and office expenses, \$364,273; shore equipments, \$1,586,960; dredging and removal of submerged rocks, \$550,000; buoys, \$40,000; vessels and various machinery, \$332,500; land and houses, \$131,500; investigation and petty expenses, \$44,516; various buildings, \$50,251; total, \$3,100,000.

What Has Been Accomplished—With the plans and the budget as outlined above the harbor works at Kelung are now making fair progress. The following is a review of the work of the second period accomplished during the 4 years, from April, 1906, to March, 1910.

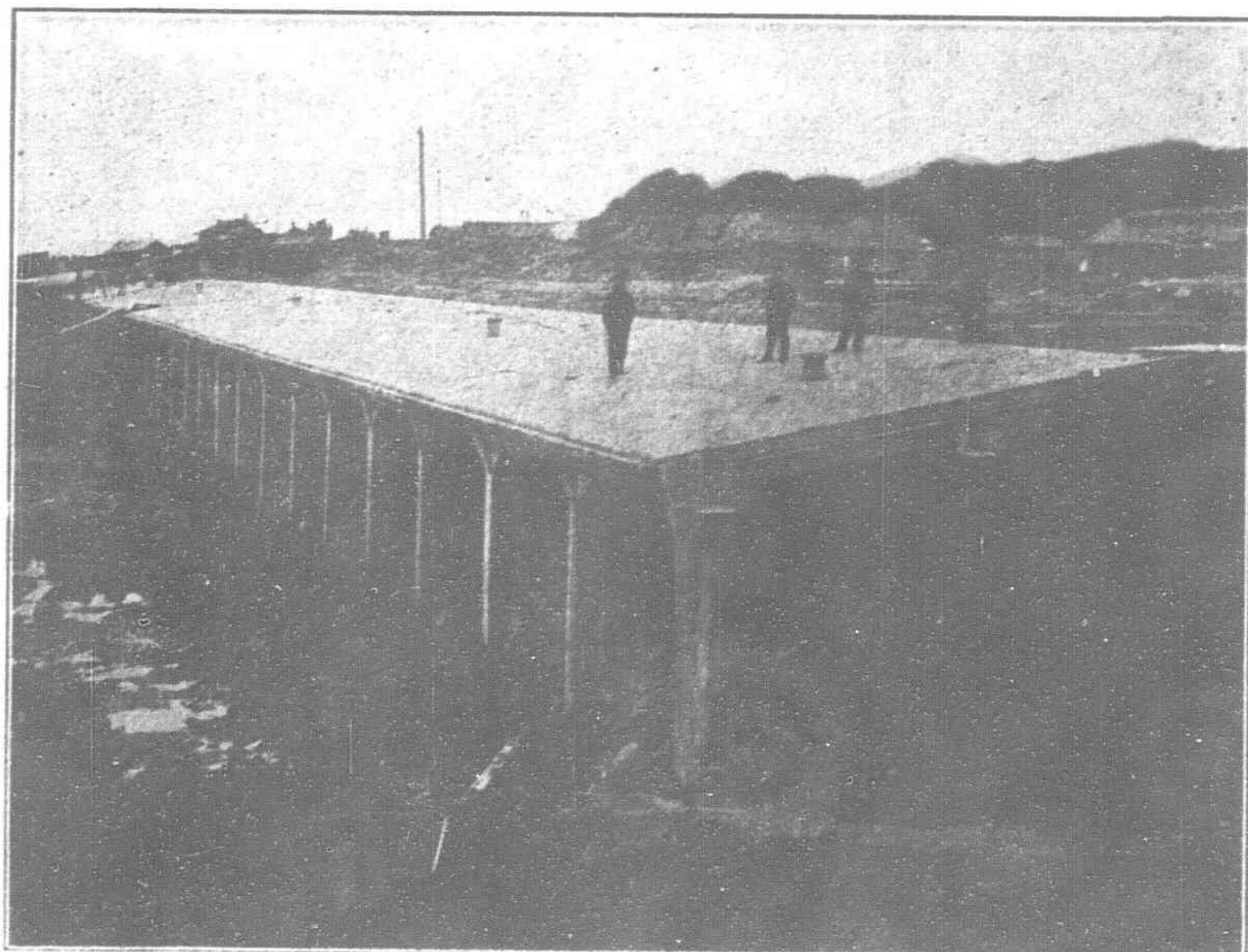
A quay wall of 720 feet in length, with a height of 10 feet above low water of spring tide, has been completed in front of the new railway station, where the *Kama Kura-maru*, a steamer of 6,000 tons, came alongside for the first time in February, 1909. Since then all the regular mail steamers that ply between

Kelung and Kobe are accommodated at this quay, giving improved facilities for the passenger and freight traffic. A quay wall 2,770 feet in length, with a height of 5 feet above low water of spring tide, has been constructed along the shore between Dai-Kelung and Sho-Kelung, for steam launches and junks.

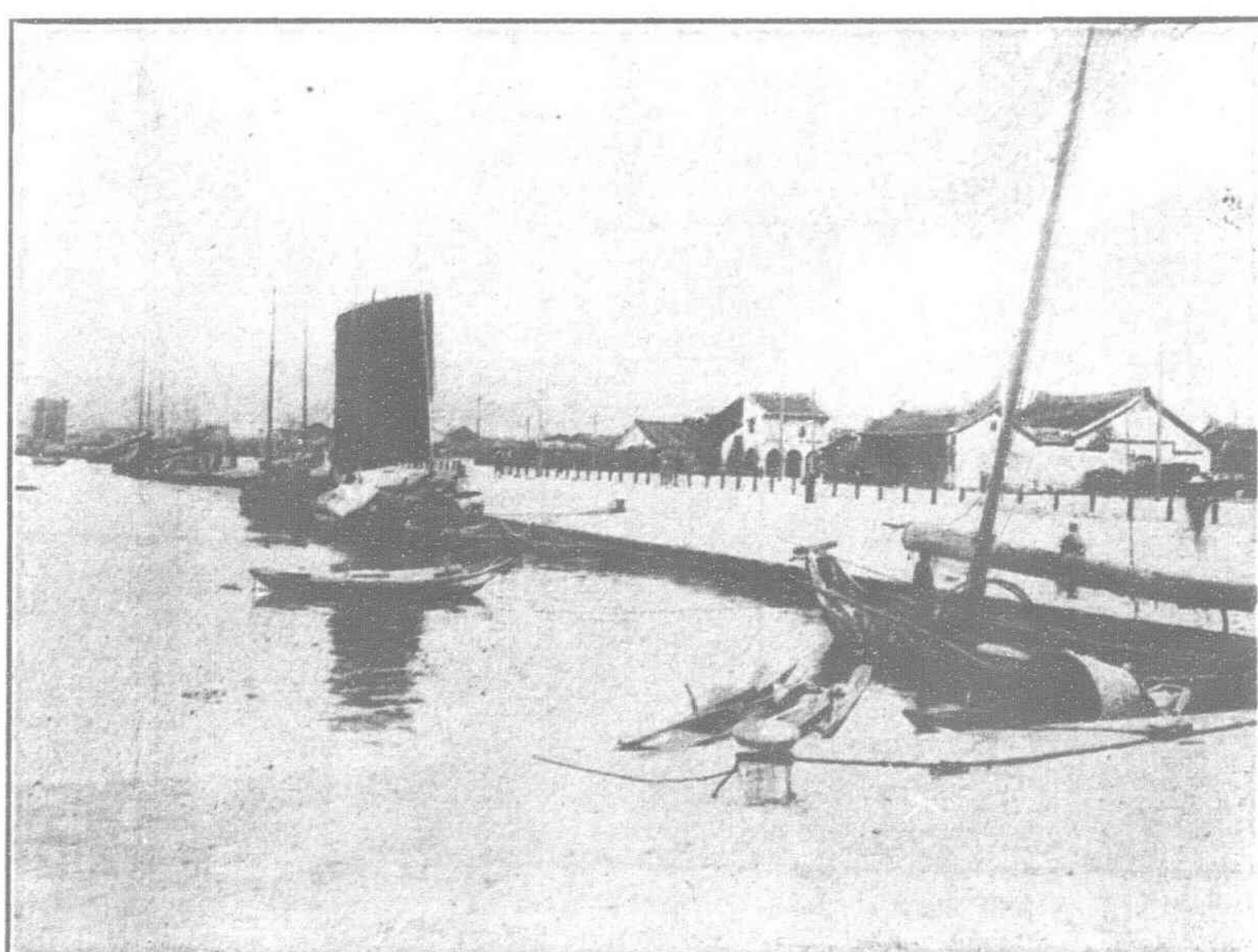
Two small shallow and polluted streams that formerly drained the streets of Dai-Kelung and Sho-Kelung, have been improved and converted into a canal of 1,770 feet in length, with a width of 90 feet and a depth of 4 feet below low water of spring tide. Along the bank of this canal, 3,144 feet of retaining wall were constructed, and five wooden bridges span the canal. Seventy-two acres of water area with a depth of more than 30 feet, and 44 acres with a depth ranging from 12 to 30 feet at low water have been obtained as the fairway and anchorage. An area of 4 acres was reclaimed at Gyuchoko to be used as a general landing yard; also reclaimed land covering 3 acres has been secured along the quay wall that runs between the old and new railway stations.

Of the vessels purchased in the first period a dredger and 3 steam launches have been transferred to the Takao harbor works, 3 barges and 2 steam launches to Tamsui, and a steam launch to the water police department, so that only 1 dredger and 5 steam launches are available for the work at Kelung.

(CONSUL GENERAL REAT, TAMSUI.)



TEMPORARY DAM, FOR CONSTRUCTION OF QUAY WALL



QUAY FOR STEAM LAUNCHES AND SAMPANS

THE BOMBAY WATER- WORKS

The water supply of Bombay is from three artificial lakes which depend upon the rainfall during the monsoon season, reports U.S. Consul Edwin S. Cunningham from Bombay. These lakes are located at various distances to 55 miles from the city and the water is conveyed through main pipes to reservoirs in Bombay, thence distributed to supply the requirements of the population.

Vehar Lake water was first introduced in 1859, and augmented by forming of Tulsi Lake in 1879, which was again supplemented by the Tansa waterworks in 1892. The total expenditures thereon have been \$91,462. The combined water supply of 31,500,000 gallons per day is quite inadequate for this growing city. The necessity for an increase in pressing. During recent years the monsoon is watched with great anxiety as the waterworks during these late years have not been in a position to meet the results of a bad monsoon or to make up the deficiency of rainfall from reserves.

The hydraulic engineer last August submitted an exhaustive report with recommendations for increasing the water supply. His plan as developed and considered by the municipality is to complete the Tansa scheme by increasing its capacity by raising the dam and extending the area of drainage. This reports considered minutely the various expenditures and the necessity of acquiring certain properties and removing villages from the catchment area aggregating an outlay of \$2,994,000 to \$3,567,000, and increasing the water supply by 18,500,000 gallons daily.

The report carefully analyses the amount to be expended for the various items. The item of importance to the American manufacturer is the duplicating of the mains, and is mentioned as duplicating siphons Nos. 1 to 7 in steel at an estimated cost of \$765,000, and duplicating siphon No. 8 in steel and cast iron \$918,500. In the event that the siphons are duplicated in cast iron throughout, the statement estimates the additional cost to be \$661,700 owing to high cost of transportation for the heavier cast-iron pipes. Steel mains have been recommended over a certain part of the pipe lines, which are between the lake and Ghatkopur. The executive engineer says:

The advantage of substituting a steel main for the proposed 48-inch cast-iron main in the pipe line north of Ghatkopur is obvious and the result will be a material saving in cost. The weight of the steel main will be only about one-third that of cast iron, the first cost will be less, transit cheaper, handling easier the joints fewer, the execution of the work more rapid and experience goes to prove that there will be no additional risks on account of corrosion. The use of steel as suggested will, in respect of the size and situation of the pipes, be in accord with modern practices.

The expenditure for the proposed main is to be met by long loans. The plan of the hydraulic engineer has been carefully considered during the last few months by the special commission of the municipality and has, to a certain extent, been approved. An expert has been employed for the purpose of making a final report on certain matters connected with the scheme, and it is expected that he will have completed his work by the end of June, this year. In the course of events the municipality will have finally acted very soon thereafter. All that can be said now (May 31) is that the importance of increasing the water supply is keenly felt by all in authority.

The plan as submitted is considered by many as the only feasible one for increasing the water supply of Bombay. Much will depend on the report of the expert, but the general plan of doubling the conduits will be necessary should developments of any kind be adopted. It will be wise for American manufacturers who are interested in supplying the material necessary for laying water mains to place themselves in a position to consider the question of bids when called for.

MINING

Tanshanwan Coal Mine.—The Tanshanwan Coal Mine has at last been pumped out and has begun work. Attempts have been made for 15 years to work this mine, and probably a million taels have been put into it. Now that the water is under control, its working presents no special difficulties; and as a light railway will give easy transport to the river, its prospects are good, as it lays an anthracite coal on the market at \$10 a ton.

Fushun Coal.—The western part of the Korean Peninsula abounds in all kinds of mineral products, including a variety of coals, anthracite, bituminous, and lignite. Pingyang produces the finest coal, which is popular with the warships, but somehow has only a slow demand as either a fuel or for heating purposes. Anshu coal is bituminous, but is worked under private management on an inconsiderable scale. As it is, Kyushu coal retains a dominant hold on Western Korea.

Fushun coal was used experimentally by the Korean Railway Administration on its trains for the first time last year, and satisfied the authorities of its greater suitability as a fuel principally because of its high calorific power. Besides, it is quoted cheaper than Kyushu coal, and these advantages are recommending it heartily to the public favour in Western Korea. The gold mines operated under foreign management are now using Fushun coal almost exclusively.

Kaying Coal Fields.—That there is a considerable quantity of coal in the hills in Kaying Subprefecture in the Swatow district has been known to the natives for many years reports Consul C. L. L. Williams of Swatow. However, beyond a few surface workings, no attempt has been made to mine.

It is reported in the native papers that some time since certain of the gentry and merchants of Paokan, Kaying, filed an application to work these mines in a modern manner. The head of the prefectural industrial bureau was instructed by the executive to make a "survey," by which is meant apparently a surface survey to determine the ownership of the land on which the workings would be located, but he returned from the fields without accomplishing anything beyond compiling a list of men, presumably landholders, who objected to the proposed workings. He then notified these obstructionists that he had appointed two deputies to make the survey. The deputies, however, made the surveying without giving the obstructionists a chance to appear. This makes it doubtful if any progress can be made with this scheme in the face of local opposition.

The principal commercial difficulty in working these mines is in the lack of adequate transportation facilities. At present water transport for small boats drawing not over 18 inches is available to within some few miles of the hills. The district does not lie far, however, from the proposed route of the Canton-Hankow trunk line, and should this undertaking mature a short spur line might be built to the fields. (C.R.)

WATERWORKS AND IRRIGATION

New Reservoir, Yokohama:—Construction of the new Yokohama waterworks reservoir at Nishiyamura was begun on June 12. The compound of the new reservoir is very extensive, with 8 filter beds, each of 3,515 square yards, or 28,120 square yards in all, capable of filtering about 405,000 koku (19,301,045 gallons) of water a day. The reservoir is to have a capacity of 185,000 koku (9,216,526 gallons).

One of the welcome innovations incidental to the extension of the work is that the supply of water for the bluff of Yokohama will be obtained from the new reservoir, which, being situated at a place higher than the present one, water pressure will be increased. This will give a

much desired protection in case of fire. For years the bluff residents have complained of the lack of pressure, not only in case of emergency but even in ordinary times in the summer season.

The ambitious plan nearly to quadruple the capacity of the present water system of Yokohama is thus now well under way. The estimated cost of the improvement is \$3,500,000; and it is hoped that it will be completed by March of 1915. The present water supply capacity per day is 870,000 cubic shaku (6,395,718 gallons), which is expected to be increased to 3,200,000 cubic shaku (23,524,480 gallons). This volume is considered sufficient to supply the need of 800,000 residents. The present population of Yokohama is little more than 400,000.

The present reservoir at Noge Hill in Yokohama being inadequate to receive the increased supply, a new reservoir has been planned on the high ground at Nishiyamura, in Tsudzuki-gun, a few miles from Yokohama. This new reservoir is to be on a much larger scale than the present one at Noge. Moreover, the location of the new one is higher than the present one, it being 240 shaku (239 feet) above the sea level, whereas the present one at Noge is 160 shaku (159 feet).

At present water from the intake to Yokohama comes through one 20-inch pipe and one 15½-inch pipe. This being insufficient, one new 36-inch pipe is being laid according to the extension program.

INDUSTRIAL

Sugar in Formosa.—According to the latest returns the output of Formosa sugar (molasses) for the next term is estimated as follows:—

Companies	Area of plantations ko	Estimate piculs
Taiwan	14,400	600,000
Ensuiko	7,000	300,000
Meiji	6,000	260,000
Dainihon	8,500	270,000
Toyo	5,800	240,000
Nitaka	5,500	260,000
Teikoku	3,000	160,000
Hokoku	4,300	140,000
Rinhongen	2,300	80,000
Chuwo	2,200	80,000
Taihoku	1,000	60,000
Toroku	2,500	80,000
Shinko	1,360	60,000
Minami Nihon	1,010	25,000
Horisha	980	40,000
Eiko	800	20,000
Taito	200	6,500
Total		2,671,500

Beet Sugar in Korea.—A project is on foot for the formation of a company to manufacture beet sugar in Korea. It is now stated that in Tokyo alone more than half the entire stock has been subscribed for. The remainder will be taken up by the promoters and supporters in the Western provinces and Korea, and it is expected that there will be no shares available for the general public. According to the present programme, the first payment on company's stock was to be made by the end of September, and Korean sugar refined by the company will be on the market towards the end of next year.

BUILDING

Reconstruction of Hankow:—Mr. M. B. Yang, a Chinese Civil Engineer, who graduated at Yale, and Columbia, arrived at Hankow in order to undertake the reconstruction of Hankow. Negotiations were reported on August 22 to be still proceeding with the Robert Dollar Syndicate for a loan to cover the cost of the reconstruction of Hankow, and the Hupeh Government has been asked to

guarantee the full amount of three to four million pounds sterling which will be forthcoming without depending on the issue of bonds.

The Philippine University.—After two attempts to secure reasonable tenders for the construction of the first building of the Group for the University of the Philippines, the government has authorized its construction by the Bureau of Public Works, and work has now been started.

University hall, as this building is to be known, is one of five which will, in the future, comprise the University of the Philippines. These five buildings are arranged as follows: The four large ones, each on the corner of a quadrangle with a smaller, or administration, building, in the center. The building now going up is situated on the southeast corner of this court. It is to be finished by June 2, 1913, or in 300 days, and is to cost P250,000 the amount appropriated for its construction. So far the only work done has been on the foundations, which are of the spread footing variety entirely of concrete and steel. The whole building is practically a steel one, encased in concrete. The structural steel used will cost in the neighborhood of P 30,000.

All the heavy manual labor, the handling of cars and the mixing of concrete will be performed by electricity. The concrete mixer, a big steel affair of the Smith number 2½ variety, is now being put in place. All foundation work will be finished by the end of the present month and then the big three story steel and concrete building will be erected. It will be 67 meters long by 25 meters wide and 15½ meters high from foundation to eaves. The 2 meters can be added for the roof, which will be of iron with patent interlocking tiles. No wood will be used whatever in the building except for the doors and windows, even the floors and ceilings being concrete.

The steel frame of the building makes it practically interlocking, and if there should be a tendency on the part of one portion to sink, the strain will be evenly distributed.

The work of construction is under the supervision of J. McGregor, an engineer in the construction division of the Bureau of Public Works. Mr. McGregor has been in the bureau since 1910, but before that had been in China, in charge of the erection of buildings and construction of railways for the Chinese government, for eleven years, having started in that country in 1899 never leaving until he came to the islands over two years ago.

LIGHT AND POWER COMPANIES

Yingkou Hydro-Electricity Co.—The demand for electricity service at Yingkou has increased rapidly and the lighting service, calculated on the unit of 10 candlepower lamp, now supplies to 9,000 lamps, compared with only 6,000 of them at the end of last October. The management, facing the necessity of being prepared for a further increase of demand, proposes to instal an extension of its power station in order to raise the supply capacity up to about 25,000 lamps. The funds required for the proposed extension are to be raised in a loan to the amount of about Y100,000.

The Company has been placed on a strictly business footing since the S.M.R. Co. bought the majority of its shares and undertook its management. The last statement of accounts shows that the business returns for the first working term after the reorganization are by far the best of all, and, although the net profit was not sufficient to justify a dividend for the shareholders, yet not an inconsiderable amount could be set aside, even after payment of the interest on the existing loans, which reach about Y500,000 borrowed in almost equal amounts from the Yokohama Specie Bank and the S.M.R. Co.

Proposed New Electric Railway Lines. India.—Bangalore, in the Native State of Mysore, ranking among the more important cities of southern India, does not possess a tramway system, but the Mysore Government is considering building approximately 10 miles of electric lines in the city and cantonment sections, with branches to outlying suburbs, Malleswaram, Basabangudi, and Frazertown.

The track proposed is one meter (3.28 feet), and tenders have already been received from firms in the United States to cover track material, car equipment, and necessary electrical apparatus for substation and cars. Definite action may be taken within a short time, possibly this year.

Another important city without a street railways is Hyderabad, capital of the great Native State of that name, immediately north of the Madras Presidency. Hyderabad has 500,623 population, and a modern electric tramway system is one of the greatest needs of this rich capital. It is believed that such a project, with proper management, would prove feasible and profitable. (C. R.)

Manila Electric Railroad and Light Co.—The Manila Electric Railroad and Light Co. submitted to the municipal board the following proposed schedules for electric light rates to become effective in January, in response to a request from that body:

Straight monthly rates: per k. w. h.: first 50 k. w. h., 35 centavos; next 200 k. w. h., 30 centavos and above 250 k. w. h., 20 centavos.

Alternative proposal: Installation charge, 20, 30, and 50 per light according to candle power the maximum price charge being for 100 c. p. metallic filament and 32 c. p. carbon filament. Current charge, first 50 k. w. h. per month, 25 centavos per k. w. h.

Yokohama Electric Light Co.—An increase of the stock issue of the combined Yokohama Electric Light Company and Yokosuka and Yenosima Electric Light Companies, has been planned. The project is to dispose of 6,600 new shares, the advance payment on them to be 20 yen each. The new issue is to cover the expense, among other things, of the erection and equipment of a 5,000 kilowatt service for Mineimizu, which will necessitate a new power house on the reclaimed ground at Kanagawa, plans for which are already in hand.

Lucena Electric Light, Ice and Water Co.—A group of Filipino citizens of the city of Lucena, Tayabas, have filed papers of incorporation with the executive secretary for the Lucena Electric Light, Ice and Water company, capitalized at P50,000. The new company is headed by Freilan Lopez, president, Valentine Racela, vice president, and Fortunato Lavares, secretary treasurer, all prominent citizens of Lucena.

In its franchise the company is authorized to construct, maintain and operate electric light plants, ice plants and such subsidiary industries as may be required in the conduct of the business. It is reported that the new corporation will begin work immediately upon their plant, which will be in operation in four months after the work is begun.

RIVER AND HARBOR IMPROVEMENTS

Saigon Harbor Improvements.—In October, 1899, the Higher Council of Indo-China took up the question of improving Saigon Harbor, and eight months later the Governor General ordered an investigation of the work needed. Plans were drawn up, and were approved by the Saigon Chamber of Commerce, which asked that the work be pushed. The Higher Council in 1900 also approved the plans, which included the following items, with estimated cost of each:

(1) Construction of quay, 3,385 feet long, on right bank of Saigon River from old mill

of Kien-Fat-Seng & Co., to approaches of South Fort; cost, \$1,209,754. (2) Construction of docks parallel to quay; cost, \$175,086. (3) Construction of railroad lines in front and behind docks, and connection with Saigon-Mytho Railroad; cost, \$261,068. (4) Construction of a branch connecting with the Mytho Railroad just beyond Cholon and tapping the rice mills in both banks of Arroyo Chinois; cost, \$261,068. (5) Establishment of anchoring posts outside channel on left bank of Saigon River; cost, \$19,300. (6) Construction across Arroyo Chinois, at prolongation of rue d'Adran, of a turning bridge for ordinary traffic and for passage of a tramway which should run between Saigon and wharves; cost, \$85,966. (7) Construction, on left bank of Arroyo Chinois, of an inclined way leading up to a platform 82 feet wide and about 2,952 feet long, for use of river boats and barges; cost, \$156,787.

Bids for the quay were called for at once, and in 1901 La Société Levallois-Perret, the same firm that built the famous Eiffel tower in Paris, was granted the contract, at \$1,505,400. The increase over the estimate resulted from adoption, by the committee in charge, of a plan calling for masonry only, in place of a platform of steel and brick arches supported on masonry piers as in original estimate.

The quay, after this change, was to consist of a wall from 12 to 16 feet thick, supported on piers 16 feet wide and 47 feet from axis to axis. This wall was to support and protect a platform constructed of earth on a foundation of rocks raised 1 foot 4 inches above highest tides. The platform was begun in 1905. Shortly after completion of first section in July soil settling seriously displaced the wall.

The piers were built on a very compact bed of argil, and it was thought that the wall would withstand the static push of the platform behind it. The latter was built directly on the natural soil, which consisted of a thick mud, with the idea that there would be a gradual settling of the whole platform as more earth was placed on top. Costly experience having disproved this theory, it was decided to revert to the original plan in which the platform of rock and earth was placed by a platform of reinforced concrete arches resting on the one side on the wall already constructed and on the other on a series of piers to be built behind the wall. The expense of this new plan was estimated at \$1,254,500, and a new contract was made with the Levallois-Perret firm.

To-day the quay is completed, the anchoring posts are in place, and the turning bridge is in use, but there are no docks or other shelter for merchandise along the quay, the approaches to the quay have yet to be built, including the railroad connections, and there is no landing stage for use of river boats and barges.

The necessary funds not being available from the budget, the Government was forced to devise other means, and in November, 1910, the Governor General established two new taxes to be collected on rice and its derivatives exported from Saigon. The amount of these taxes for one year, estimated at about \$70,000, is to be applied solely to the Chamber of Commerce of Saigon and to supply Saigon Harbor with needed equipment. Unfortunately, however, with the increasing need for funds has come a series of bad years for rice crops, so that the amount realized from the two taxes has fallen far below the estimate and the harbor works have suffered accordingly.

The first shed for storing cargo from or for steamers tying alongside the new quay is about to be erected by the Compagnie des Chargeurs Reunis, one of the two French steamship companies trading in the Far East. This building is to be 197 feet long and 39 feet wide, with the necessary outhouses, and will be built 66 feet from the edge of the quay. The plan for the building is the work of the Public Works Department, but the expense of construction and maintenance will be met by the company, which will then be free from all charges for landing or storing of merchandise. The cost is estimated at about \$2,300, and the company has agreed to surrender the building to the authorities upon demand, the Government to

repay cost of construction, minus an allowance for usage. In case the two parties cannot agree upon the price, an expert is to be secured.

Without adequate provision for sheltering goods from the sun and rain, the new quay will be of little value. Steamers tie up alongside it now, but they take on their cargoes from lighters which come alongside on the stream side. Several hundred thousand dollars must be spent on further improvements before the full benefit of the present work can be realized. Efforts are now being made to increase the appropriation in the budget for these improvements, which, if ever completed, will give this port a creditable system and greatly facilitate loading and unloading steamers. (C.R.)

Floating Dock, Soerabaya:—A steel pontoon floating dock for the Droogdok Maatschappij Soerabaya of Amsterdam was launched on June 21 at Port Glasgow, Scotland. The dock, which is named Soerabaya I, is designed for vessels up to 400 feet in length. The outer extremities of the pontoon are built in the form of a bow. They are lengthened by platforms. The top deck of the side walls is sheathed with teak. Two docking and painting stages are fitted on the inside of each of the side walls. The pumping machinery is electrically driven. Self-indicating floats have been provided, showing the water level in each compartment, and the dock is fitted with a complete system of mechanical shores, electric capstans, controlling valve levers, keel blocks, portable bilge blocks, etc., while at one end gates have been fitted to form a bridge from side to side. These can be used also as cranes for dealing with heavy weights. After the trials have been carried out the dock will leave under tow for Soerabaya, Java, via the Suez Canal.

New Dry Dock in Borneo:—An important event in the history of the Public Works Department and the progress of Sarawak, in Borneo, took place on May 31, when the dry dock was formally opened. The dock, which was commenced at the end of 1908, has taken just over two years to build, work having been stopped for nearly a year. The dock is capable of holding either the *Kuching* or *Rajah* of Sarawak. (C.R.)

HARBOUR WORKS

Proposed Water-gate at Shuangtaizui.—The proposed construction of a water-gate at Shuangtaizui, at 79 miles above Yingkou, where much of the river water of the Liao is diverted into a tributary which joins the main river at that point, has been abandoned. Mr. Hughes, Chief Engineer in charge of the construction work of Lienshan Harbour, drew up a plan for the water-gate at the request of Taotai Yuan of Newchwang, and the Taotai was about to start work, with the approval of Chao Erh-hsun, when the inhabitants along this tributary united themselves in an antagonistic movement, and threatened to create trouble unless the scheme were dropped altogether. They profess that they much depend on the tributary for their sustenance, and moreover that the prevention of the water from flowing thereinto by means of the water-gate will deprive them of the chief factor of their livelihood. This stout opposition has led the Governor to enquire further into the matter and to rescind his approval previously given to this proposition.

Port Arthur.—The appropriation for the construction of roads, bridges, and drains in Port Arthur on an eight year's programme beginning with the fiscal year 1908 amounts to Y 1,032,700. Of this sum about Y 230,000 was defrayed during the four years ended on March 31 last. According to the original plan the balance of the appropriation was to be disbursed during the remaining four years in sums ranging

from Y 150,000 to Y 430,000 a year. This plan was reversed at the beginning of the present fiscal year, and the amount of annual disbursement for the above-mentioned purpose has been reduced to Y 20,000 uniformly, which sum being considered as absolutely inadequate to carry out the construction work on the existing plan, it is expected that the whole programme itself will be suspended from execution at the end of the current fiscal year.

SHIPPING AND SHIPBUILDING

Shipbuilding and Shipping, Japan:—There are 230 shipbuilding yards in Japan, not including junkbuilding establishments, a decrease of 9 compared with 1910. For the last year, covered by available authentic statistics, these yards turned out 77 steamers of 24,479 tons and 147 sailing vessels of 11,097 tons. This is a decrease of 58 sailing vessels from 1910, but an increase of 10 steamers, the tonnage of the latter, however, decreasing 38,906. This record does not include a number of new steamers since completed or authorized, which tend to strengthen Japan's North American and European lines. All of Japan's leading steamship lines are preparing to build additional steamers for the foreign service, mostly medium-sized freight and passenger craft. Japan's total shipping now includes 2,545 steamers, of 1,233,909 gross tons; 6,392 sailing vessels, of 413,720 gross tons, and 22,463 junks, of 31,413,710 cubic feet. Four steamers, having a gross tonnage of 15,817, were completed during the past year under the law for encouraging shipbuilding. The subsidized steamship lines now number 24, which operate on most commercial routes throughout the world, except those on the Atlantic Ocean. With the completion of the Panama Canal, Japanese steamers will probably visit the Atlantic seaboard, particularly in connection with the extensive raw-cotton freight traffic.

Philippine Customs Cruiser:—Bids will soon be invited for the construction of a revenue cutter for the customs authorities that will have a speed of sixteen knots. It will be equipped with an auxiliary launch and a motor boat each having a similar if not greater speed. This vessel is necessary in order that the active smuggling in southern waters may be abated. The collector of customs has recommended the purchase of such a vessel in his last three annual reports but the money necessary to cover the expense was never made available. Act No. 1054, appropriated P60,000 for the purpose but that amount was far from sufficient to secure a vessel of the size and speed required. The balance of P100,000, however, has been made available from savings made from the appropriations for the bureau by economical administration.

FINANCIAL

London, Singapore and Java Bank.—The London, Singapore and Java Bank has been registered with a capital of £50,000, in £10 shares, to carry on in Great Britain, Europe, the Dutch and British East Indies or elsewhere, the business of bankers, financiers, financial agents, money changers, bill brokers, discounters, underwriters and guarantors, etc. The subscribers are:—G. St. L. Mowbray, 23, Suffolk-street, Pall Mall, S. W., and F. N. Varney, 17 Caversham-road, Kingston-on-Thames, secretary. It is a private company, and the first directors are G. St. L. Mowbray and A. Berry.

China Mutual Life Insurance.—According to the annual report of the Directors of the China Mutual Life Insurance Co., Ltd., new applications received during the year amounted

to \$12,751,774. Policies were issued for \$11,249,562 and applications for \$1,502,212 were postponed or declined. The total insurance in force on 31st March, 1912, amounted to \$43,199,946, of which policies to the amount of \$210,411 were re-insured. The income for the year amounted to \$4,172,657.76, being an increase for the year of \$204,776.56. The total assets now amount to \$11,301,067.53, an increase during the year of \$1,157,645.93. The total amount paid to policy-holders and beneficiaries during the year amounted to \$1,678,769.18, making a total of \$7,086,642.26 paid since the Company's inception.

A New Bank.—A plan has been formed in Japan, it is reported, to establish an exchange bank with a view to furthering the foreign trade and exchange transactions of the country. The chief promoters are Mr. Buyei-Nakano, president of the Tokyo Chamber of Commerce, Mr. Soichiro Asano, president of the Toyo Kisen Kaisha, Mr. Kenji Imanishi, Manager of the Yokohama Specie Bank, and several other influential business men in Tokyo and Osaka. According to the plan the bank will have a capital of either 5,000,000 or 10,000,000 yen and will make itself an organ for small traders, directing its attention to the field untouched by the Yokohama Specie Bank, which is the only bank to accommodate those engaged in external trade.

American Enterprise.—Until quite recently the Tasmanian government made it an invariable policy to permit none other than British or Australian manufacturers to compete in tenders for supplies, and to purchase nothing in any other country that could be obtained in Great Britain or Australia. However, in October, 1911, the Tasmanian railways were placed by the state parliament under the control of a commissioner, who is to hold office for four years, and have full authority to operate the railway system on business principles, and independent of any political considerations. Shortly after assuming office some steel rails were purchased in England through the agent general in London, and with regard to the tenders having as usual been restricted to British manufacturers, an American firm wrote to the new commissioner to the effect that it could have landed the rails in Tasmania at about \$3.60 per ton cheaper than the price at which they were supplied from England. The commissioner wrote in reply that the next time any steel rails were required, American as well as English firms would be given the opportunity to submit bids.

New Germinal Tobacco Factory:—On September first the Germinal Cigar and Cigarette Factory, was to begin the construction of the largest concrete building yet planned for Manila.

The new building will be located on 3,500 meters of land which lies alongside of the present factory building, and has a frontage of 35.5 meters. It will be four stories high and fitted with electric elevators, overhead electric conveyors, and all other appliances that will increase the speed, and lessen the cost, of handling large quantities of tobacco.

The building will be used entirely for the manufacture of cigars and cigarettes and will be modeled and fitted after the very latest factories in Germany, Cuba and the United States. The cost is estimated at P. 140,000.

If the present plans of the company are carried out, as soon as the factory is completed, the old factory will be torn down and the new building extended over to the Ayala bridge at an additional cost of about P 150,000.

Mr. Delmar Smith-Clinton is the contractor in charge of the preliminary work, and piles are now being driven for the foundation of the new building.

The Germinal Company will also build a new concrete factory at Malabon for the manufacture of cigars only.

Bids for the new factories have not been awarded, but will probably be let soon.

